

*The*  
**AMERICAN  
RIFLEMAN**



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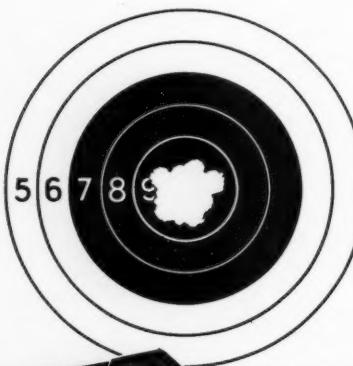
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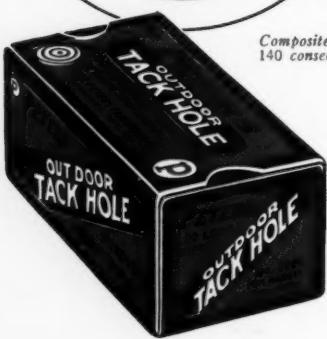
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# GREAT SMALL BORE RECORD *made by CAPT. THURMAN RANDLE with*



**WINCHESTER**

TRADE MARK

**MODEL 52 and PRECISION**



**CAPT. THURMAN RANDLE'S** rifle record stamps him as one of the world's foremost small-bore shots. At Camp Perry, in the Dewar Team matches, in the Southwestern championship tournaments, he has compiled score after score that combine to give him a record of which any target rifleman may well be proud.

A study of some of the high spots from this record, shown on this page, will show how Capt. Randle has climbed to the top of the heap in the rifle world. Throughout the record shown here-with Capt. Randle has shot that "unbeatable small-bore combination of victory," the Winchester Model 52 (heavy barrel) and Precision ammunition. The scores amply show the skill of a master shot. They also show how completely this Winchester combination has consistently backed up the "machine rest" holding ability of Capt. Randle.

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## Capt. Randle's remarkable record

### 1928

Southwestern Championship Match, 50, 100 and 200 yds. (iron sights)	247x250
50-yard match—10 standing, 10 sitting, 20 prone	276x300

### 1929

High score East-West Team Match, Camp Perry	294x300
Southwestern Championships—100-yard match	297x300
Winner of Grand Aggregate, Southwestern Tournament	

### 1930

Preliminary Dewar Match, Camp Perry	795x800
High Individual, East-West Match	296x300
Tied top score Short Range Individual	398x400
High score Dewar Tryouts	397(av)
Third place National Individual Championship	
50-yard Spring Championship	400 (36 x's)
Dewar Match	398x400
100-yard Match, Southwestern Tournament	199x200
Texas Special Match, Texas State Championships	297x300
Grand Aggregate, Texas State Championships	1386x1400

### 1931

High Individual, two-man team Short Range Match, Camp Perry	399x400
100-yard Individual, Postal Matches	400 (30 v's)
Spring Championship	800x800
100-yard match, Southwestern Tournament	297x300
Dewar Match Southwestern Tournament	396x400
Grand Aggregate, Southwestern Tournament	
Dewar Match, Texas State	390x400
Grand Aggregate, Texas State	1372x1400

**WINCHESTER REPEATING ARMS COMPANY**

**NEW HAVEN, CONN., U. S. A.**

# The AMERICAN RIFLEMAN

VOL. 80, No. 6

JUNE, 1932

## WHY?

The American Rifleman is the official organ of the National Rifle Association of America, created and maintained to accomplish the following objectives:

1. Assistance to legislators in drafting laws discouraging the use of firearms for criminal purposes.
2. Prevention of the passage of legislation unnecessarily restricting the use of firearms by honest citizens.
3. Teaching the safe handling of firearms to both adults and young men and women, and providing safe ranges, interesting competitions and attractive trophies, to reduce haphazard shooting.
4. Encouraging adequate police instruction with firearms and providing instruction courses and instructors.
5. Developing higher standards of marksmanship in the uniformed Services constituting our first and second lines of defense.
6. Assisting commercial and government arms and ammunition factories in the development of improved guns and ammunition.
7. Providing shooters in small communities with the same opportunity to obtain the latest and best in shooting equipment as is enjoyed by the residents of the largest cities.
8. Providing new shooters with unbiased information which will avoid their wasting money on equipment not suited to their needs or purse.
9. Standing firmly behind all proper efforts to maintain an adequate but non-militaristic national defense program for the United States.
10. Maintaining proper permanent records of achievement in rifle and pistol shooting similar to those maintained by the respective National organizations interested in other competitive sports.

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# E D I T O R I A L

## Where There's a Will—

**W**HÈRE there's a will there's a way," is one of those old copy book maxims frequently laughed at during the self-sufficient days which came to an unhappy end last year. Like many of the other copy book maxims which originated during the frugal, fighting, pioneer days of America's youth, however, it is again being accepted as a thought worth adopting and following.

The National Matches will not be held in 1932 unless the Senate reverses the action of the House of Representatives in considering the Army Appropriation Bill. Such action by the Senate does not seem probable at this time. Nor does it seem probable that any War Department assistance will be available to help send an American Team to Bisley this year. Furthermore, reduced income available for expenditure on ammunition may cast gloom over the regular weekly shooter's outlook for this summer.

To some groups of our American population such a combination of circumstances would appear as a terrific obstacle which would have to be overcome before they could participate in their favorite pastime. "Where there's a will there's a way," has, however, fortunately always been the characteristic attitude of the American rifleman. From the little group of frontiersmen in the beleaguered blockhouse, through the dark days of Valley Forge, the trying times of the Civil War and the frantic, blundering efforts of the World War, this spirit of the American rifleman, regardless of defeatist talk, of the faint-hearted element in our population, has carried victory safely through, perched on the barking muzzles of American rifles.

That same spirit is already in evidence in the face of this year's difficulties. The larger the hurdle, the more fun and satisfaction in surmounting it. The National Matches are out of the picture this year, but regional matches carrying all the famous old rifle shooting trophies will take their place.

There are more active State Associations operating this year than ever before. The State Rifle Matches will furnish a gathering place for thousands of American rifle and pistol shooters this summer. The postal matches are attracting the largest entry lists in the history of these events. The Bisley Team may not go to England, but the Dewar Team will

be organized and will shoot against the British as usual. International Matches in which American Teams will compete against such foreign teams as come to this country will be held in August, probably on some range near the National Capital. The cost of ammunition may be high as compared with reduced incomes, but reloading, which was an integral part of rifle shooting prior to the advent of prosperous times, is already again taking its place in the category of things that the rifleman knows how to do well.

Rifles and handguns bought and paid for during more prosperous times are still in the hands of the shooters. Hundreds of thousands of fired brass cases are lying around clubrooms and private gun cabinets. New brass cases can be purchased at a fraction of the cost of complete cartridges, and with care in loading can be used over and over again. Reloading equipment is not particularly expensive, but where the cost is too much to be comfortably borne by the individual, one set of tools can be bought by a group, and plenty of ammunition for the whole crowd loaded with this one set of tools. The younger men who have come into the game during the period when it was fashionable to buy tailor-made ammunition and "not bother with reloading" will discover an entirely new fascination to the sport when they begin "loading their own." They will pick up bits of information concerning ballistics which will make them more intelligent shooters when they go back to the tailor-made variety of ammunition.

The inexpensive, accurate .22 will be another avenue of escape from high shooting costs this summer. Twenty-two caliber ammunition has never been so superlatively accurate as it is today. Competition has resulted in the development of a new series of .22 caliber rifles by well-known manufacturers, selling at depression prices but equipped with stocks, sights and barrels which ask nothing in the way of favors from the high-priced, custom-built jobs of a few years ago.

There is no doubt about it—the American rifleman is going to find ways and means of continuing his shooting activities this summer.

Where there's a will there's a way—and there's ample will this year to make 1932 as big if not a bigger shooting year than 1931.

# The **AMERICAN RIFLEMAN**

JUNE, 1932

## Machine Guns

By MAJ. JULIAN S. HATCHER

**I**N THE several articles on semiautomatic firearms that have appeared in the last three issues of **THE AMERICAN RIFLEMAN**, practically all types of self-loading guns have been covered, but nothing has been written on guns capable of full automatic fire, that is, guns which will continue firing as long as the trigger is held down and the ammunition supply holds out.

Guns of this kind which are capable of fully automatic fire as long as the triggers are held are called, in the main, "machine guns," though there is another nomenclature that enters here in the case of the very light portable machine gun which is standard in our Army and which is called the "automatic rifle," as distinguished from the semiautomatic rifles which have already been described.

Machine guns as a class are not a very new invention, for some type of gun capable of firing more than one shot at a time has been the goal of inventors ever since the beginning of firearms history, and many inventions of this class were tried out in the days of muzzle loaders, and perhaps even before that, for it is said that there was a cross-bow used at the Battle of Hastings in 1066 A.D. which was capable of firing ten arrows at one time.

From the earliest days of firearms until the present time, the effort to increase the volume of fire obtainable from a single weapon has been continuous, and this has resulted in the production of an innumerable host of contrivances, most of which were merely curios but a few of which were useful.

In the era of the muzzle loader, the machine guns of that time usually took the form of a row of musket barrels mounted side by side in a frame like the pipes of an organ, and arranged so that they could be fired one at a time or all together. These contrivances were called "organ guns." In general they were not much of a success. In the first place they were heavy and clumsy to handle, but this was not their greatest disadvantage. That was the fact that after all the barrels had been fired in rapid succession, thus gaining quite a volume of fire for a short time, this period of usefulness was immediately followed by the long interval of inaction necessary to reload separately each of the muzzle-loading barrels.

A much improved gun of this general type, called the "Requa battery," was used in the late stages of the American Civil War. The gun had a sliding breechblock which could be opened by a lever, and when the breechblock was opened the gun could be charged with special cartridges which were held in a long strip, behind which the breechblock was closed by the lever handle. Each cartridge had in the back end a hole which communicated with a vent in the breechblock. The vents were all connected together by a hole extending through the



THE VICKERS MACHINE GUN

entire length of the breechblock and arranged to be filled with fine powder. In the middle of the breechblock was a regular percussion lock with a hammer, and a nipple for a cap. When this cap was fired the flame spread from the center toward each end of the breechblock, and the cartridges were ignited successively. The reloading could be done with reasonable rapidity, as all that was necessary was to replace the strip of cartridges, place some powder in the communicating channels, cock the hammer, and place a new cap on the nipple.

Another old Civil War machine gun embodied the principle of the revolver. This gun used cap and ball ammunition which

had only one barrel, which was consequently subject to overheating and excessive fouling from the residue of the black powder which was used in those days.

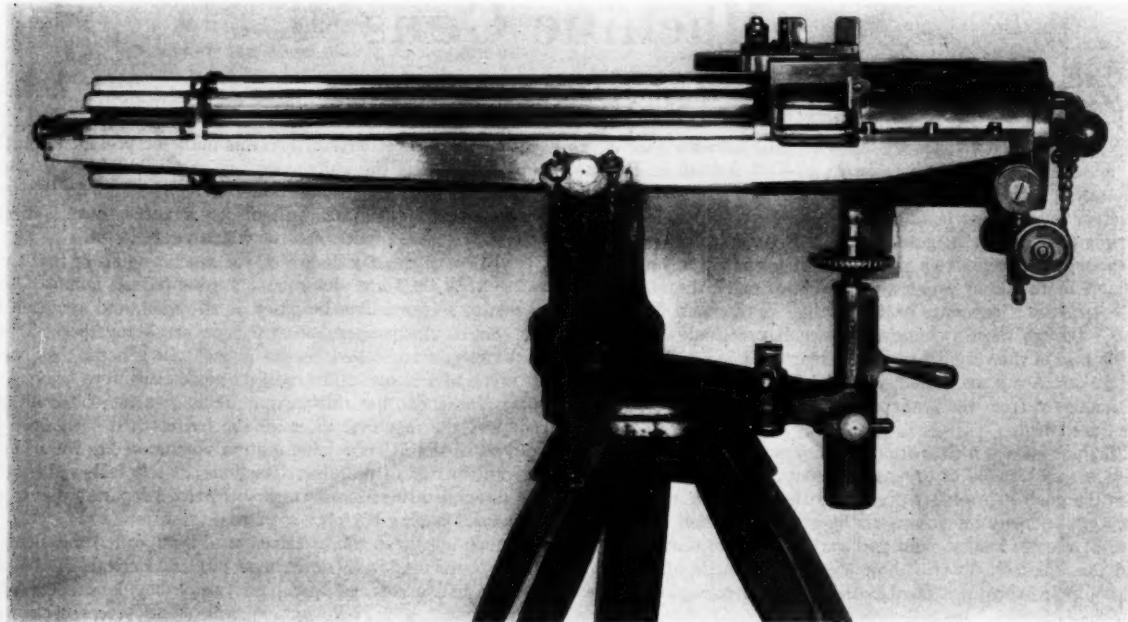
### The Gatling Gun

The first really practical and successful machine gun was invented on November 4, 1862, by Dr. Richard J. Gatling. The Gatling gun was somewhat similar to the revolver gun described above in that it used the same general type of steel cartridges which were fed from a hopper into grooves in a cylinder which was revolved by a crank on one side of the gun. At one point in the travel the charge was held firmly against the back end of the barrel

demonstrate it by bringing the gun out on a battlefield, and firing at an actual enemy.

As soon as the self-contained metallic cartridges were invented, great improvements in the Gatling mechanism were made and the number of barrels was increased, usually to ten.

The Gatling gun was adopted by many nations and enjoyed a long period of popularity. It was really a most effective weapon and had some very good features. In our own service it was the standard machine gun as lately as during the Spanish-American War. In the Santiago campaign both automatic machine guns and the Gatlings were used side by side, and



THE GATLING GUN

was loaded in steel containers, which served the double purpose of cartridges and explosion chambers, as the containers did not enter the barrel of the gun at all but during the explosion were held close behind the barrel but in line with it, like the chambers of a revolver.

To prepare the gun for action, a number of the containers were loaded with powder and ball and each was primed by placing a percussion cap on the nipple. The loaded containers were then placed in a hopper on top of the gun, and upon turning the crank the charges were fed down into grooves on the edge of a revolving cylinder which carried them past the breech end of the barrel, where they were successively fired, each empty container being rolled out on the far side of the breech as a fresh one was being fed up. This gun

by a cam mechanism, and fired as in the early revolver gun; but the Gatling gun differed importantly from the other gun in that instead of having only one barrel, it had six, one for each of the grooves in the feeding cylinder at the breech. These six barrels revolved with the cylinder so that each cartridge, after once entering the mechanism, remained in line with its respective barrel until it was fired and finally ejected from the gun. In this way each barrel was fired only once for each revolution, and the heating and fouling effects were greatly reduced. An additional advantage was the fact that hangfires were rendered comparatively harmless, as the cartridge was always in line with the barrel.

As this invention occurred during a war, the promoters found an easy way to

the Gatlings seemed to be the more effective at that time.

### The Mitailleuse

During the Civil War many experimental guns were tried, but as this was before the days of metallic cartridges, none were very successful and all were considered freaks or experiments, as indeed they were.<sup>1</sup> As the Gatling came out near the end of the war, it passed practically unnoticed. After the war it gradually became popular, but before it reached this popularity the Franco-Prussian War occurred, and the French invented a machine gun called the "mitailleuse," which created a great sensation at that time.

The word "mitailleuse" comes from the French word *mitaille*, meaning small cannon balls or grape shot. The French

now call all machine guns by this name, and they also call a machine gunner a *mitraileur* (or grape shooter). The name originated, however, with the weapon which Napoleon III used against the Prussians in 1870. This consisted of 25 rifle barrels fastened together into a parallel bundle and encased so as to resemble a field gun. The breech of the gun could be opened to allow a block containing 25 cartridges to be inserted. Each of the holes in the block registered with one of the barrels. After the breech was closed a turn of the handle released the 25 firing pins, one after the other, thus firing a volley of 25 shots which could be made slow or fast according to

its undoing. The Prussians heard of the wonderful new gun, and from what they knew of the Gatling and other machine guns they were sure that they had a formidable antagonist. Therefore they set about with characteristic energy and strategy to compass its downfall, in which they were most successful. They realized that the French were well supplied with these weapons, and that what few machine guns they themselves could obtain would not be sufficient to counteract it. Accordingly, for the purpose of producing a moral effect, they scorned the Gatling and such other machine guns as they could have obtained, and fostered a contempt for all weapons of

they were used with effect, but in general they were a failure. The German strategic fiction that machine guns were useless soon came to be believed not only by the Germans themselves but by everyone else, and the adoption of machine guns by all nations was delayed for years by the fiasco of the *mitrailleuse*, the machine gun field for some years following being largely filled by the Gatling gun.

It will be observed by the reader that up to this time all the guns described were hand-operated guns, or guns in which the muscular power of the operator was used by means of a crank or lever to do the loading or unloading. For example, in the



**COLT MACHINE GUN.** THE MAN OPERATING THE GUN IS THE AUTHOR OF THIS ARTICLE. PHOTO TAKEN IN 1917

the speed of the firing handle. The gun was capable of firing about 125 shots a minute.

The advent of brass cartridge cases had removed many difficulties attending the invention of machine guns, and the *mitrailleuse* was really a formidable weapon. This gun was adopted a year or two before the Franco-Prussian War, and its construction and operation were kept a deep secret. Though efforts were made to keep the actual details of the guns secret, their existence was widely heralded, and the French were told that they had a weapon which would make them invincible, and would render victory easy and sure.

The fame of this invention and the secrecy surrounding its actual use proved

this class. At the same time, they carefully instructed the artillery to concentrate on the *mitrailleuses* whenever they appeared, and to insure their destruction at all costs.

In addition to this handicap, the *mitrailleuses* went into the war practically unknown to the army that was to use them. They were kept about as much a secret from the army as from the public, and the result was that the personnel was unfamiliar with the mechanism, and that no proper tactics had been worked out. When the guns were finally brought into action they were used as artillery, and not as infantry weapons, and the usual result was that they were quickly destroyed by the German artillery. In one or two instances

Gatling, one man put the cartridges into the gun while another man turned the crank continuously as long as he wanted the gun to shoot.

#### The Maxim Gun

It was inevitable that sooner or later some inventor would discover a way to make the gun fully automatic, that is, to utilize part of the force of the cartridge for throwing out the empty shell, operating the mechanism of the gun, and putting in a new shell. This was accomplished in 1884 by Sir Hiram Stevens Maxim, who produced the first successful automatic gun; and today in nearly its original form it remains one of the leading machine guns of the world, though it is now known by



BROWNING AUTOMATIC RIFLE

the name of Vickers, from the firm which made it for so many years. This firm was first known as Vickers Sons & Maxim, but is now Vickers, Limited.

Maxim was an American, traveling in Europe at the time of this invention. In a letter to the editor of the *London Star*, in 1915, he gives the following account of how it happened that his inventive efforts were turned to the field of firearms:

"In 1881 I visited the Electrical Exhibition in Paris, and was made a Chevalier of the Legion of Honor on account of some electrical and chemical work I had done; and about a year later I was in Vienna where I met an American whom I had known in the States. He said: 'Hang your chemistry and electricity! If you wish to make a pile of money, invent something that will enable these Europeans to cut each other's throats with greater facility.'

"This made me think of the time when I was about 14 years of age and was making drawings for my father of a hand-worked machine gun. I also thought of the powerful kick I got the first time I fired a United States military rifle. On my return to Paris I made a very highly finished drawing of an automatic rifle. Happening to meet a Scotchman in Paris whom I had known in the States, I showed him my drawings. He invited me to come to London. I did so; and shortly after I started an experimental shop at 57d, Hatton Garden."

The Maxim or Vickers gun is of the recoil-operated type, fed with a belt holding 250 cartridges. In a gun firing a heavy cartridge, such as the U. S. Government service cartridge, it is necessary for the breechblock to be firmly locked to the barrel during the explosion of the cartridge.

In the Maxim gun the barrel is mounted in a water jacket and is held in bearings so that it can slide back and forth for a short distance of about three-quarters of an inch. Attached to the back of the barrel there is a frame which slides with the barrel. In the frame there is a breechblock with a firing lock in it, and this breechblock has grooves on the front to hold the rim of the cartridge behind the barrel. There is a toggle joint, one end of which is fastened to the breechblock and the other end to the back part of the frame above mentioned, which is attached to the barrel. When the gun is in the firing position the two members of this toggle joint are right on dead center, so that the thrust of the cartridge trying to push back the breechblock is transmitted through this toggle to the frame, which is attached to the barrel; thus the recoil action and the thrust on the breech simply push the barrel, frame, and breechblock all back to the rear at one time. But as soon as the barrel has moved back a short distance, a projection on the toggle joint above mentioned strikes against a roller which forces the toggle joint off dead center, thus unlocking the breech mechanism and allowing the breechblock to move away from the barrel. As the breechblock separates from the barrel it extracts the old cartridge, which is ejected from the bottom of the gun. A new cartridge is placed in the barrel as the breechblock goes forward under the action of the operating spring.

The Vickers gun has a very simple and reliable action, and for many, many years has given extremely satisfactory functioning wherever it was properly used.

As long as the firing mechanism is held down this gun will continue to reload and fire automatically at a rate of about 450

rounds per minute until the belt of 250 cartridges is exhausted, when a new belt must be fed in and the gun loaded with the motion of the crank on the side, after which it is ready to fire again.

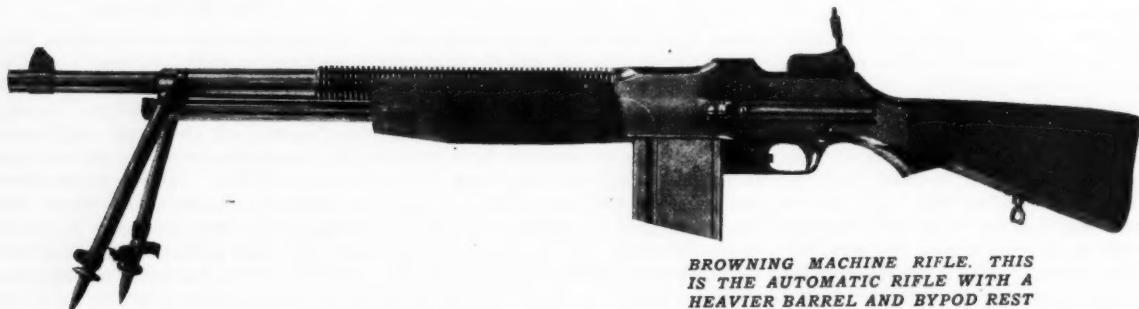
The gun is ordinarily fired from a tripod which enables it to be controlled for both elevation and direction. Owing to the intense heat of firing so many cartridges in rapid succession, the gun would become red hot in a very short time unless some special means of cooling were adopted. For this reason there is a water jacket surrounding the barrel, which holds 7½ pints of water. The water in the jacket begins to boil after 600 rounds, and then evaporates at the rate of 1½ pints for each thousand rounds.

The Vickers gun weighs 38 pounds, including the water in the jacket, and the tripod weighs 35 pounds.

In 1904 the heavy Maxim gun was adopted as standard for the United States Army, to be superseded in 1909 by the Benet-Mercie, which will be described later. In 1916 the Vickers gun, which was a lighter edition of the same type of mechanism as the Maxim, was adopted as the Army standard, and many Vickers guns were used during the World War.

#### The Colt Machine Gun

The invention of the Maxim machine gun was followed by the design of a gun by John Browning, of Ogden, Utah, which afterward became known as the Colt. Mr. Browning produced the first model of this gun in 1889. Instead of utilizing the recoil of the barrel to operate his gun, Mr. Browning bored a hole in the barrel a little more than halfway out to the muzzle, and allowed a jet of gas from this hole to strike on a swinging lever pivoted under-



BROWNING MACHINE RIFLE. THIS IS THE AUTOMATIC RIFLE WITH A HEAVIER BARREL AND BIPOD REST

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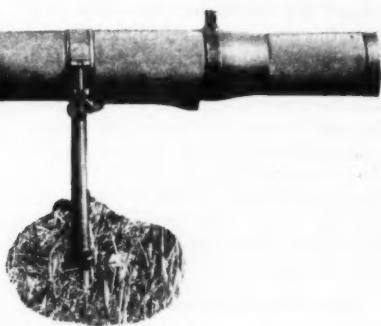


LEWIS MACHINE GUN, GROUND TYPE

after we entered the war we purchased 5,000 Colt guns from the Marlin Company. These guns are now obsolete as far as our Army is concerned, as they have been superseded by the later Browning.

greatest power was available just where it was needed, that is, for extracting the fired cartridge and for closing up the breech-block on the newly inserted live round.

When the Marlin Company took away



neath the barrel. When the gun was fired the bullet was moved rapidly along the bore, and when it got nearly out to the muzzle, a jet of gas passing through the gas port would swing the lever around to the rear. By the time this lever had moved a short distance, the bullet had left the muzzle of the gun, the continued motion of the lever unlocked the breech and threw out the empty cartridge, after which a spring returned the lever to its original position, at the same time feeding in a new cartridge and finally firing the gun.

This gun, called the "Colt gun," attacked the heating problem in a different way from that used by the Maxim. Instead of having a water jacket, it had the barrel made as heavy as possible so that it would take quite a few shots to heat it up until it was too hot to fire. The weight of this gun is about 35 pounds, and the tripod weighs 56 pounds. As in the Maxim and Vickers guns, this gun is fed from a belt holding 250 rounds.

The Army and Navy used a number of these Colt guns at one period, especially during the Spanish-American War. During the World War they were made in quantity for the Russians by the Marlin Firearms Company, of New Haven, and

### The Marlin

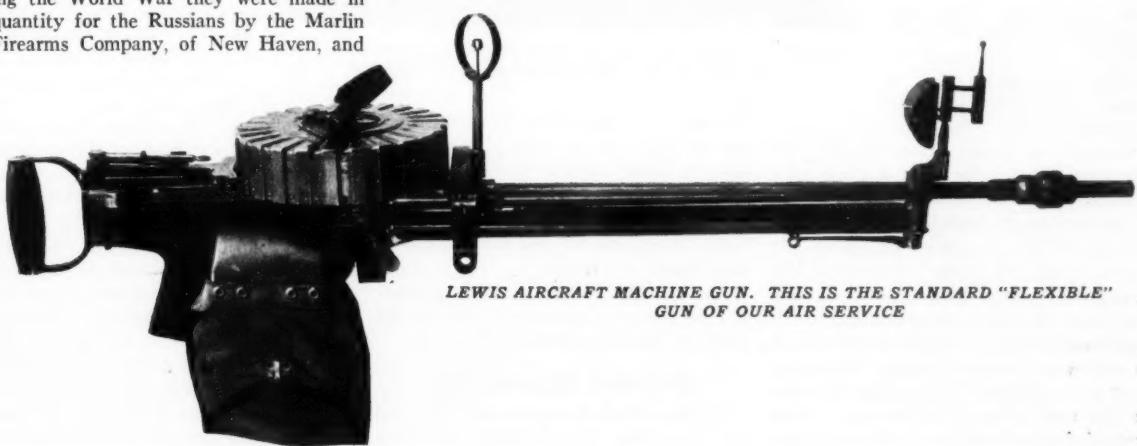
As the swinging lever under the Colt gun was in the way, the Marlin Arms Company changed the mechanism of this gun so that it could be operated by a piston lying under the barrel, as was already the case with the Hotchkiss and the Lewis guns, to be discussed later.

The old Colt was a very reliable gun, and its excellent action was due to the fact that the swinging lever upon which the gas acted, communicated its motion to the breech through a connecting rod. As the lever started to swing down, the connecting rod moved to the rear, but very slowly at first, as it was nearly on dead center. As the lever moved farther, the connecting rod took up a faster motion. Thus the breech would start to open slowly but with great power, and would gradually speed up. In closing it would operate rather fast at first, then would close up slowly, but with great power for the last closing motion. Thus in this gun the strain on the mechanism was the minimum on account of this accelerated motion, and moreover, the

this swinging lever and substituted a straight piston action, it lost this accelerated motion, and the result was that an immense amount of trouble was experienced at first in making these guns work. Matters were helped somewhat by putting a heavy weight on the piston so as to slow up this first motion and give it power to carry through its stroke. At last this gun was gotten so that it would operate, and Marlin guns were purchased by the Army to be used as synchronized guns on airplanes.

### Hotchkiss Machine Gun

It was at about the same time Mr. Browning first worked out his Colt gun, that Baron Von Odkolek, an Austrian Army officer, also invented a gas-operated gun, but instead of having the gas work on a swinging lever, he had it work on a reciprocating piston. This invention was taken up and perfected by Mr. Ben B. Hotchkiss, an American living in Paris. For many years the Hotchkiss Company made this gun most successfully, and the company



LEWIS AIRCRAFT MACHINE GUN. THIS IS THE STANDARD "FLEXIBLE"  
GUN OF OUR AIR SERVICE

is still one of the world's largest makers of gun material.

The Hotchkiss gun, like the Colt, uses a heavy barrel instead of a water jacket. The barrel is so arranged that when it gets very hot it can be quickly detached and replaced by a cool barrel. Instead of using a belt, this gun uses a steel clip with spring fingers to hold 30 cartridges. As one man holds down the trigger of the gun, another feeds the strips in from the left-hand side. This gun is made very heavy and rugged, and is extremely reliable. It was, and still is, the standard gun of the French, and during the World War our Army used many thousands of these guns with great success.

#### Benet-Mercie Gun

A much lighter type of the same gun, called the Benet-Mercie, was adopted by our Army in 1909. This was what would now be called a "machine rifle" instead of a machine gun. The difference between a machine rifle and machine gun is that the machine rifle is much lighter and is adapted to be fired from a prone position, flat on the ground, with the muzzle supported by a bipod (that is, by a pair of light legs) instead of from a heavy tripod. The weight of this gun is about 29 pounds. Very few were made, and these guns gave much trouble on account of the fact that not enough firing was allowed in those days to teach the soldier how to take care of the relatively complicated mechanism.

#### Lewis Machine Gun

At the beginning of the World War the Government had under test a new light machine gun, or machine rifle, invented by Col. Isaac N. Lewis, Coast Artillery, U. S. Army. This gun was like the Hotchkiss in that it was a gas-operated gun employing a straight piston which was driven to the rear by a jet of gas from a port drilled in the barrel. It was fed from a flat pan-shaped magazine holding 47 cartridges which was placed on top of the receiver and fed around and around like a cog wheel as the firing progressed. The barrel of the gun was surrounded by an aluminum radiator, outside of which was a sheet-steel casing something like a section of stovepipe. This casing was open at the rear end, and at the front end it extended past the muzzle of the gun so that

the blast of the gas from each shot had a tendency to create a draft of air, and this air passing over the fins of the aluminum radiator, helped to keep the gun cool.

This Lewis gun was at first not successful with our heavy M-1906 cartridge, so it was developed for the much less powerful British .303. This happened just about the beginning of the World War, so the British, who were badly in need of machine guns, purchased large quantities of Lewis guns and used them with great success. After the United States entered the war,

competitive test of machine guns. At this time Mr. John Browning submitted a heavy-type water-cooled machine gun, built on the recoil action with very much simplified mechanism, which passed an excellent test. Owing to its great simplicity from a manufacturing standpoint, it was decided that it would be better to adopt this gun and put all the new manufacturing plants that would have to make machine guns, to making this gun instead of the Vickers; and this was done.

The result was that many thousands of

Browning machine guns were completed before the end of the war, and this gun is now the standard of the United States Army. It is about the same size and weight as the Vickers, and uses the same kind of tripod. Like the Vickers, it is recoil operated and has the water jacket. Like the Vickers, also, it feeds from a 250-round belt, though the belt is of a much simpler construction than that of the Vickers. The weight of this gun is 36½ pounds with water in the jacket, the tripod weighs 48 pounds, and the rate of fire is 550 shots per minute.

The Browning gun with water jacket removed and barrel made heavier and shorter was used for arming tanks, and as thus modified weighs 34 pounds and is called the "Browning tank machine gun." Stripped of its water jacket, and fitted with a synchronizing gear instead of the usual hand trigger, this gun becomes the "Browning aircraft machine gun" for mounting on airplane engines for firing through the propellers.

An exactly similar gun in .50 caliber was built in both the water-cooled type, weighing 66 pounds, and in the aircraft type, weighing 52 pounds.

These Browning guns were made during the war by the Colt Company, Remington Arms Company, and the New England Westinghouse Company, but since the war they have been made only by the Colt Company, who owns the patents.

Just within the last three or four years a much improved model of the Browning aircraft machine gun has been gotten out, called the "M-2 machine gun." This gun is lighter, fires faster, and is made so that the belt can be fed either from the right side or the left side at will, instead of only from the left side as in the original Browning guns. The new M-2 gun is used only



VICKERS "FIXED" MACHINE GUNS IN TWIN, SYNCHRONIZED MOUNTING ON WAR-TIME PURSUIT PLANE

the Lewis was adopted as an aircraft gun, and for this use it was stripped of its aluminum radiator and steel barrel jacket, as cooling is not so important with aircraft guns which are constantly exposed to movement through the air, and which fire only short bursts at a time.

The Lewis gun weighs about 27 pounds, and as mentioned above, is what would today be called a machine rifle.

#### Browning Machine Gun

In May, 1917, just after our entry into the World War, the United States held a

on aircraft, and weighs 17 pounds. The inside works are almost exactly the same as those of the old Browning, with some slight refinements.

### Light Machine Guns

During the early part of the World War, the Germans were armed with the heavy Maxim guns, known as the Model '08, and the British were armed principally with the Vickers, which is a lighter Maxim, and with the Lewis. As mentioned above the Lewis gun is a machine rifle type, which instead of being fired from a tripod, fires from a light muzzle support close to the ground. These light Lewis guns could be readily carried forward with advancing parties of soldiers, and after the latter had attained a position somewhat in advance, they could lie flat with these guns, and lay down bands of fire to stop any counter attack.

The Germans soon felt the need for such a gun, and produced a Maxim known as the '08/15. This was a Maxim gun with a water jacket, and a small bipod support so that it could be used in the prone position, the same as the Lewis gun. The water jacket was made much smaller than it was on the original Maxim, in order to make the gun lighter. Feeding was from belts of 100 rounds each from a small box attached to the side of the gun.

This use of light guns by the British and Germans caused a need for such a gun to be acutely felt by the French, and the result was the development of a new gun called the "Chauchat," weighing only about 25 pounds. With this gun a new type of machine gun firing became much talked of, and that was the so-called "walking fire." The gunner was supposed to carry the gun forward with him in advance, point it in the direction of the enemy, and fire it from the hip. The Chauchat was a machine rifle with a bipod, and was of the "long-recoil" type mechanism. The barrel and all of the breech mechanism recoiled several inches to the rear inside the barrel casing. These heavy parts moving backward and forward weighed almost as much as the rest of the gun, and the result was a violent, jerky motion of the gun when firing. The mechanism was crude, but it was simple, and for this latter reason the guns could be made in almost any fairly well equipped machine shop. Many thousands of them were used, not only by the French but by the American Army as well, those used by the Americans being chambered for our own cartridge. This gun was much disliked as a crude makeshift, and was discarded as soon as possible after the war.

Soon after the United States entered the World War, Mr. John Browning, above mentioned, submitted what was then called a light machine gun but which is more

properly called a heavy automatic rifle. This was a gun on the general lines of a large-size shoulder rifle, weighing 15 pounds. It was gas operated and fed from a detachable-box magazine holding 20 shots. It could be fired either fully automatic or semiautomatic, simply by changing a lever on the side of the gun. The gun was well adapted to either marching fire as above described, or firing with machine-gun action from the prone position, using any kind of rest available for the muzzle of the gun.

This gun passed a magnificent test. It was immediately adopted and many thousands were manufactured for the Army. It is officially known as the "Browning Automatic Rifle, Model 1918," and is still the standard weapon of its kind in our Army, one automatic rifle being furnished for each squad of infantry.

This rifle can be fired fully automatic from the shoulder, but it requires practice to do this without losing control of the gun. When this is attempted by someone who does not know the trick, the rapid succession of recoils, coming one after the other at the rate of 450 a minute, will throw the firer quickly off his balance and he will usually allow the muzzle of the gun to swing around to the right, or up in the air, or both. Some near tragedies were narrowly avoided when this gun was first introduced into the Army by having someone try to fire it from the shoulder while it was being examined by a group. Almost invariably the firer would swing sharply around to the right with the gun still shooting, and the result was danger of shooting those spectators on the right flank. It is really more the surprise effect than anything else that causes this, because if the firer will just lean into the rifle as he starts firing it, there will be no trouble whatever.

After the war some of these automatic rifles were built having heavy barrels with cooling flanges on them, and with bipods to support the muzzle. These guns are known as the Browning machine rifles, and they are more on the order of a real light machine gun than is the Browning automatic rifle itself, which does not have any bipod and which is too light for any continuous fire without getting overheated.

### Submachine Guns

Since the World War a new designation has come into the machine gun family, that of "submachine gun," which means a light, portable gun capable of being fired from the shoulder or hip, either full automatic or single shot, and using pistol cartridges. This is the kind of machine gun that is meant when we hear of the use of machine guns in gang wars and other criminal activities, as gangsters do not use the military high-powered long-range machine gun

for the short-range assassinations that occur in gangland. It was in 1916 that I had my first experience with submachine guns, in testing the Villar Perosa gun (sometimes called the Revelli). This was a two-barreled Italian gun, shooting 9-mm. Luger pistol cartridges and intended at that time to be used for arming airplanes. There were 50 cartridges in the magazine, and on pressing the trigger the whole 50 were fired in a little over a second, making the speed of fire so rapid that the noise of the individual shots could not be distinguished at all, the sound of firing being much like that of tearing a strip of canvas.

During the latter part of the war the German Army used a number of submachine guns of the type called the "Bergmann." This gun looked like a short, stubby rifle. It was built to shoot the Luger pistol cartridge from a so-called snail magazine, that is, one in which the cartridges lie in a spiral so that 50 could be gotten into a single magazine. This Bergmann gun was semiautomatic, that is, it fired each time the trigger was pulled.

After the war General Thompson, a retired Army officer, invented a submachine gun to shoot the caliber .45 automatic pistol cartridge. These guns are much used by police departments and others, and are often referred to as "Tommy guns." They shoot either from a straight magazine holding 20 .45-caliber pistol cartridges, or from a circular magazine holding 50. As these guns use the relatively low-powered pistol cartridges, it is not necessary for them to have a fully locked breech mechanism, and all of the submachine guns above mentioned use a retarded blow-back action, which means that the force of the cartridge simply blows the breech open, but because the breech is much heavier than the bullet, it cannot open fully until after the bullet is gone. In the Thompson gun there is a sliding wedge which further reduces the speed of opening and helps to retard the blow-back action.

### Observations on Machine Guns in General

It will be seen from what is written above that machine guns can be roughly divided into two classes, water cooled and air cooled.

In the water-cooled gun, whenever the trigger is released the mechanism stops with a live cartridge in the chamber. Most air-cooled guns are made so that when the trigger is released the gun stops with the breech open and no cartridge in the chamber. Then when the trigger is again pulled, it releases the mechanism which closes up and fires at the same time. The Hotchkiss gun, the Benet, the Chauchat, the Lewis, and the Browning automatic rifle are all made in this way. The reason for this is

obvious. With an air-cooled gun the barrel gets very hot, and if a live cartridge were left in the barrel when the firing was interrupted it might explode in a few seconds from the heat.

At a demonstration at Sandy Hook in the early part of the war, the writer, who had just previously been conducting a series of machine-gun schools along the Mexican border, mentioned the fact that the barrel of a gun would get red hot when fired extensively without stopping. An official who was present said that it was impossible to fire a gun that much without a jam. Accordingly a demonstration was arranged for a class of students who were studying machine guns, and I personally fired a Benet-Mercie machine rifle 1,000 shots without stopping. After 700 shots the barrel was red hot, and at the end of the thousand shots the barrel was a bright cherry red, and part of the receiver had begun to glow. The official who had started the argument was dancing up and down, shouting: "I see it but I don't believe it."

Of course, in practice a barrel is never fired enough to make it red hot, but several hundred shots will make the barrel of an air-cooled gun too hot for safety in case of a jam. In working with air-cooled guns some very exciting experience will be had when a jam occurs with a very hot barrel and a cartridge stuck in the chamber, and with the breech partly open and partly shut.

Once on the Mexican border I saw a student get a cartridge jammed in a hot gun with the breech partly open. He was looking right in it and I had visions of the cartridge exploding in his face, so I snatched him away from the gun and grabbed up a cleaning rod so as to knock the hot cartridge out before it had time to explode. I was just a little too late, however, for as I shoved the rod down in the muzzle, the cartridge went off. It apparently went off just about the time the rod touched the bullet, for the bullet did not go out of the barrel. The cartridge case was blown to bits but no damage was done, as the breech, being open at the back, allowed the explosion to dissipate itself to a large extent. I knocked out the bullet and found that it was somewhat flattened where the point had rested against the cleaning rod. I still have this bullet and the remains of this cartridge case among my rather large collection of cartridge curios.

At the test of the Berthier machine rifle at Springfield Armory in 1917, a jam occurred, and when the handle of the gun was drawn back the hot cartridge was ejected but exploded in the air just in front of the group of men who were holding the gun. The bullet stuck in the cuff of one of the spectators.

Another time at Springfield Armory a cartridge exploded while I was extracting it from a hot Browning automatic rifle, but fortunately it was all the way out of the breech; and when a modern military rifle cartridge explodes in the open air it does not have much force, so no damage was done. Usually the explosion is just sufficient to tear open the cartridge case and send the bullet with very low velocity. Of course there is danger of getting pieces of brass blown into hands or eyes.

The greatest danger in a case like this is in having an explosion when the breech is jammed in a position very nearly closed. In this case the pressure is high and the explosion is violent, and some parts of the breech mechanism are likely to be blown out with sufficient force to do great damage. In this way, an extractor blew out of a Marlin gun and struck a soldier in the abdomen, inflicting a wound from which he afterward died.

The modern aircraft guns are made on the same principle as the water-cooled gun. In fact, they are nothing more or less than water-cooled guns with the water jacket removed. They depend upon the motion of the airplane through the cold upper air to keep them cool. However, if an aircraft gun is fired too many shots in one burst, it may get sufficiently overheated so that it will fire from the heat.

There are two kinds of aircraft guns. One is called the flexible gun, and the gunner in the rear cockpit of an observation plane, or in the front seat of a bomber, will have a pair of these guns mounted on a swivel so that he can swing them in any direction to fire at an attacking enemy upon the ground or in the air. In a single-seated pursuit plane, however, there is nobody to handle a flexible gun, as there is only the pilot. Accordingly the practice grew of mounting guns on the engine so that they point in the same direction as the plane. The firing mechanism of the guns is geared to the engine in such a way that the guns can be fired only when the propeller blade is not in front of the muzzle, thus enabling the guns to shoot through rapidly revolving propellers with-

out hitting them. Such guns are called "synchronized machine guns." Besides being used on pursuit airplanes, there is usually a pair of them mounted on observation planes and fighting planes, in addition to the flexible guns above mentioned.

Besides the flexible guns and the synchronized guns, modern fighting planes sometimes have guns mounted inside the wings pointing in the same direction as the plane and controlled by a cable reaching to the pilot's seat, or by an electric firing mechanism. Some airplanes even have machine guns mounted in the landing gear, that is, in the wheel cowling.

Ground machine guns use cotton belts for feeding the cartridges, but this was soon found to be undesirable in airplanes, as the belts streaming in the wind would cause trouble. One early plan was to have a cutter attached to the side of the gun to cut the belt up into small pieces as it came out. The latest plan, however, is not to use fabric belts at all for airplanes, but instead to use disintegrating belts formed by metallic links by which the cartridges are held together. As the end cartridge is pulled out, the link that held it to the rest of the belt falls off. Thus, as an aircraft gun is fired there is a stream of ejected cartridge cases and a stream of ejected links which once formed the belt.

Ground machine guns are usually mounted on tripods, though the early ones such as the Gatling, Maxim, and some of the early Colts, were mounted on wheels like artillery. The modern-day machine-gun mount is a combination of these two methods of mounting. The tripod is retained for ground use but it is transported by fastening it on a small cart with two wheels. If necessary the gun can be fired while the tripod is fastened on the cart. Ordinarily, however, when there is plenty of time to go into action, the wheels are taken off the cart and the chassis of the cart, which is T-shaped, forms a firm base for the tripod.

Before we leave this subject of machine guns, we might say a word as to the cartridges. There seems to be some confusion among users of rifle cartridges as to whether the same cartridge is used in machine guns and rifles, or whether there is a different cartridge. In our Army the same cartridge is used for both the shoulder rifle and machine gun, except in the case of the .50-caliber gun, which, of course, uses a much larger cartridge.



# Shooting and Temperament

By L. E. EUBANKS

ONCE in a while we run across a fellow who takes to a gun as a setter takes to water. Several names will readily come to your mind of men who seemed to shoot well from the very first; who "just skipped" their novitiate, that trying period of months wherein most beginners analyze, perspire, give up, and then start over again, and wonder if the thing ever can be mastered.

But natural ability is comparatively rare. It can be found in all sports, and shooting is no exception. Jack Dempsey is a natural fighter, and Willie Hoppe is a natural billiardist; yet both these men have been defeated by contenders who were not so blessed by nature, proving that sometimes perspiration is as effective as inspiration, and that determination and earnest hard work can make up for lack of the best start.

Shooting is deeply concerned with temperament. In nine cases out of ten there must be certain temperamental adjustments and readjustments before the sportsman ever becomes really expert with his weapon. These adjustments may be the result of careful study and experiment, or they may seem to have come of their own accord, by constant practice. But they evolved somehow. My point is this: the fact that the average man can become quite a good shot by practice that is virtually unguided, without system—"instinctive," we might say—shows that shooting can be classed as "natural"—a thing which the human mind and hand find agreeable and feasible. Since unscientific application can achieve the results it does, then we have every reason to expect excellent results from study and practice of the right kind. Therefore, if you are not a "natural" shooter, take heart, for there is every argument (theoretical and practical) to prove the art highly cultivable.

Temperament is defeating many shooters—or rather, failure to adapt the temperament to the sport. If A can hold a gun just as correctly and firmly as B, has eyes just as good, and works under the same outside conditions, yet never shoots as accurately, what is wrong?

The difference is *inside*. Temperament is working against A. With all the physical conditions the same for both, the difference in their results must be from mental causes.

I can speak from much experience on this subject. For a long time I was the man A. I had a very poor temperament for shooting; I could not be deliberate to save my life. I was the same way in playing billiards; and in both sports I had to discipline myself to overcome the dis-

position to go off half-cocked. Even in tennis, I used to be halfway on the receipt before the service was ever sent over. In all the sports I have tried I have had that handicap to deal with, but I have become a fair performer in each of them; and this proves that we can if we will.

On the other hand, there is the phlegmatic person, who always seems lukewarm, too little interested, always just a little slow, etc. In both cases, adaptability has to be cultivated; a high degree of success is impossible without it.

Unless you are one of those rare exceptions spoken of in the first paragraph, you have certain temperamental defects as concerns shooting. You belong to one class or the other—you are too fast or too slow. Of course, this is always measurable in degree. Your overspeed and anxiety may not be extreme, or you may not be very slow; but why not correct even the slight defect? It will make a great deal more difference in your performance than you may have believed.

Analyze yourself, proceeding on the foundational fact that shooting is mostly a mental matter. Anyone with hands and eyes can manipulate a gun after a little practice; the fellows who graduate are the ones who naturally have the mental qualifications, or acquire them. Not that it is a matter of superior intellect or scholastic education; but a peculiar poise, a balance between overhaste and delay, a well-measured deliberation, a concentration that is effective without being tense; care without anxiety.

The most subtle defect of disposition among shooters is what I call the self-temperament. Overhaste or slowness is easily corrected, compared to this deeper trouble, for the latter's relation to shooting may never be suspected by the shooter himself. It works insidiously; undoes him while it flatters him.

Too much self—that is it, plainly stated.

It is the temperament of some persons to put too much self into everything they do. A young friend of mine who has been target-shooting for several years, without much improvement, recently unburdened himself to me.

"Why can't I be like other fellows?" he lamented. "I try hard, but somehow I can't take hold of the game the way other men do."

Having known him a long time and watched him in other activities as well as shooting, I understood the reason. The boy is shackled with a certain kind of fear—fear that he will not play up to his opinion of himself. He isn't exactly egotistic, but self-conscious; he thinks too much about himself, and exaggerates the importance of criticism.

We can not give a sport, or any other effort the best kind of concentration when we are listening to the comments of bystanders and wondering what the effect will be if we miss or hit, lose or win, etc. Our mind *must* be exclusively on the work if we are to do our best. Theoretically, you may be a faultless performer—may understand shooting much better than your opponent—but with your thought divided while his is entirely on the work, you will usually lose.

Snap out of it—to use a popular expression. You are all wrong in thinking that you are the center of attention and criticism; others are not half as much concerned with your appearance or the success or failure of your efforts as you think them. It will help you to get the correct perspective if you, mentally, exchange places with another. Imagine him making some mistake that you particularly dread making. How would it affect you? You probably wouldn't give it a second thought, for mistakes are common; we all make them.

Get away from self by being interested in what you do. Shoot on some team, where you will learn that results and co-operative effort count more than the individual. Join your local sportsmen's club, and get interested in establishing the truth of some pet belief you have. Do everything you can to form the habit of going after results and keeping self out of your activities.

Too much subjective thinking (about oneself) develops the very qualities you would shun, gives you an unnatural bearing, and may even bring ill health; but objective thought (that which is directed to achievement, to the happiness of others, etc.) is wholesome, healthful, and constructive—it really gets you somewhere.



# Offhand Shooting

By TOWNSEND WHELEN

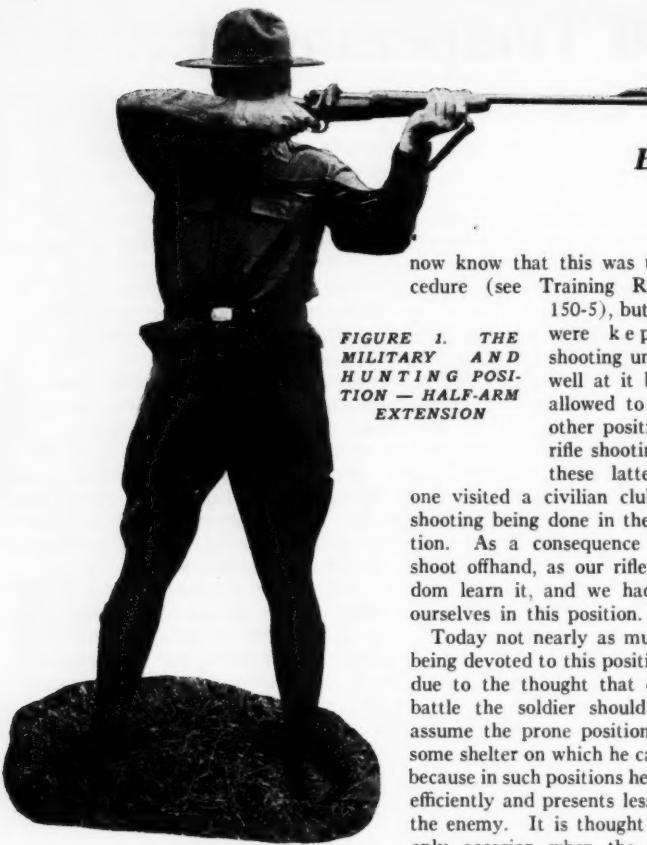


FIGURE 1. THE MILITARY AND HUNTING POSITION — HALF-ARM EXTENSION

now know that this was the wrong procedure (see Training Regulations No. 150-5), but at any rate we were kept at offhand shooting until we could do well at it before we were allowed to proceed to other positions in military rifle shooting; and even in these latter days, when one visited a civilian club he found all shooting being done in the standing position. As a consequence we learned to shoot offhand, as our riflemen today seldom learn it, and we had confidence in ourselves in this position.

Today not nearly as much attention is being devoted to this position as formerly, due to the thought that on the field of battle the soldier should always either assume the prone position or get behind some shelter on which he can rest the rifle, because in such positions he can shoot more efficiently and presents less of a target to the enemy. It is thought that about the only occasion when the soldier will be called upon to fire standing is when he is advancing and an enemy suddenly appears at short range, and that such shooting will be in the nature of snap shooting or rapid-fire standing, and that in battle there will be scarcely any slow-fire shooting in the standing position. As a result, we see comparatively little attention being devoted to this position in military rifle shooting, and even in civilian rifle shooting most of the shooting is done in the prone position. The Dewar Match, for example, is fired entirely in the prone position. Ninety-five per cent of all small-bore shooting is done prone. In fact, other positions may be said to have become unpopular.

I think all this is a mistake. I would not consider anyone a really good all-around rifleman unless he could shoot at least fairly well standing, and I must say I can heartily second Harry Pope when a few years ago he advised that our riflemen learn to "stand on their hind legs and shoot like a man." From the military point of view I do not believe anyone can become a good snap shot or rapid-fire shot in the standing position unless he first become a good offhand slow-fire shot. I hope to see a revival in this form of shooting, and with that end in view I have thought it well to give our members a

résumé of the technique of offhand shooting, for it seems to me that if we do not soon take it up more energetically, there is danger of the art being entirely forgotten.

By offhand shooting we mean shooting in the standing position, without any portion of the body except the feet touching the ground. There are two forms of such shooting, based largely upon the position assumed. The military form is prescribed by the proviso contained in the Army Training Regulations that: "A position with the left hand against or under the trigger guard and with the left upper arm supported against the body is not a practical field position and is prohibited." This proviso governs all military offhand shooting, and also offhand shooting in clubs when it is prescribed that military rules shall govern. The military position



FIGURE 2. IN HOLDING OFFHAND, FACE WITH LEFT SIDE TOWARD THE TARGET AND SEE THAT THE LEFT ELBOW IS WELL UNDER THE RIFLE

**I**N THE days of our forefathers the offhand standing position was the standard way of shooting the rifle. At least 80 per cent of all rifle firing at target or game was done in this position. There was a little turkey shooting in the prone position with rifle barrel rested over a log, and a little game shooting with rifle rested against the side of a tree, but in the eastern part of our country other firing positions were practically unknown. On the plains, however, where vegetation and ground did not interfere, there was quite a little prone shooting done.

Serious military rifle shooting, as I pointed out in this magazine a year ago, began about 1880 with the birth of the National Rifle Association and the development of real accuracy in the breech-loading rifle. In those days shooting offhand was considered of equal importance to shooting in any other position; and indeed more of it was done than shooting in other positions, because it was harder to shoot well standing, and required more practice. Prior to about 1905, almost all civilian rifle shooting was done in the standing position.

Even when I began to shoot the rifle some forty years ago, the beginner was always taught to shoot offhand first. We

is the one to practice in preparation for war or for hunting, because it is the only practical standing position from which snap shooting or rapid fire can be done.

In the civilian-target form of offhand shooting, the body-rest and hip-rest positions are permitted, and in certain cases the rules of the match may permit the use of rifles with palm rests attached. In these positions one can teach himself to hold steadier than in the military position (except in a strong wind), and higher scores are possible. These are positions for slow-fire shooting only. Snap shooting and rapid fire are impossible. But while these are not as practical positions as the military position, they still teach the control of the trigger while standing, and for this reason they are valuable training positions; because trigger control standing is difficult to acquire, and anything that helps toward that end is a great aid.

There is no form of shooting that requires more unremitting practice to excel in than offhand shooting. No one has ever become a good standing shot without it, no matter how familiar he is with the technique, or how perfect a rifle he has. In 1907, when we of the Army Infantry Team were training for the National Matches, it was very apparent that

our slow-fire standing shooting was our weak point, so General Shaw (then Captain Shaw), who was team captain, saw to it that we had several 200-yard A targets available all day long, and whenever opportunity presented itself while we were waiting our turn for other shooting, we practiced on these targets—with no record kept and no audience. Everyone shot three or four scores every day. As a result, the ability of all of us improved greatly. My own average went up from about 40 to about 43½. I would thus advise anyone wishing to excel to practice as much as possible. And, particularly, I would advise solitary practice, without anyone looking on, certainly in the first stages of the game. You simply must get confidence in yourself, and the only way to do that is to practice until you begin to average high scores alone. It is difficult to accomplish that with people looking on. You are more or less nervous for fear you won't make a good showing, and you don't learn to "freeze" in position, which is very necessary in order to consistently get your bullets into the black. As this is going to take a great deal of ammunition, it is more economical to do most of your training with the small-bore rifle.

Do not neglect trigger-squeeze exercises. These

FIGURE 3. THE HALF-ARM EXTENSION WITH HASTY SLING ADJUSTMENT

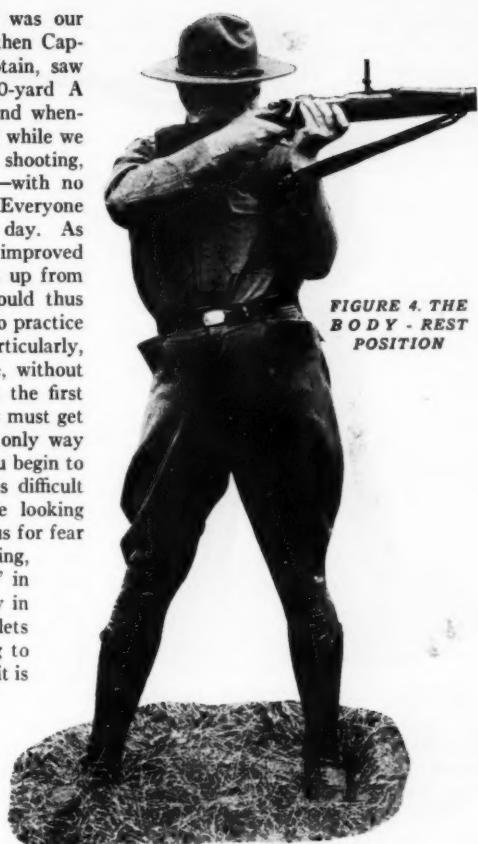
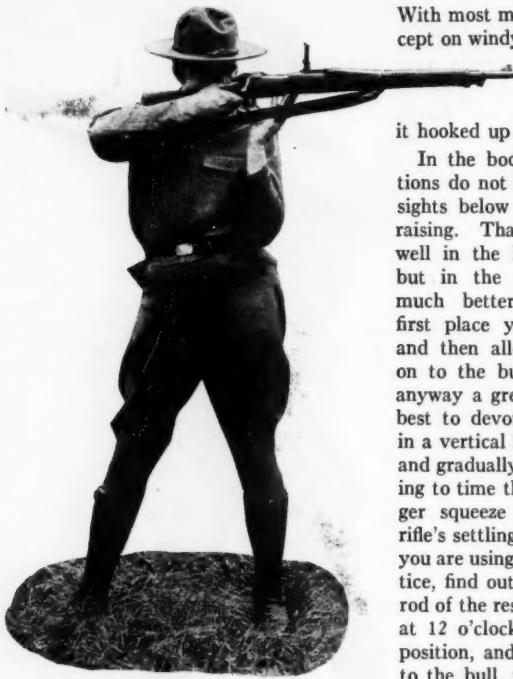


FIGURE 4. THE BODY - REST POSITION

the positions in which most of our good outdoor shots have been most successful. It is not meant that you should assume these positions exactly, but as a rule one should not depart far from these without good and sufficient reason.

Study these photographs carefully. In all positions the left side and left shoulder are towards the target. One should face almost at 90 degrees to the right before he raises his rifle to his shoulder. The feet should be planted firmly, about 15 inches apart, and turned out (or not) just enough to be comfortable and steady. Except in the hip-rest and palm-rest positions, both knees should be straight and braced back stiffly, but not stiffly enough to cause unsteady effort, and the weight of the body should be about equally divided between the feet. This position, with both knees straight, prevents you from rocking back and forth and helps to eliminate horizontal errors. To help eliminate vertical errors, keep your weight between your feet. Bent knees and a crouch do not tend to steadiness. But when shooting in the hip-rest or palm-rest positions, the left leg should be stiffer than the right, with the left knee locked, a little more weight on the left foot than on the right, the right knee not bent, but



**FIGURE 5. THE HIP-REST POSITION**

not exactly locked stiff; and the left hip should be thrust out towards the target so that you can rest your left elbow on it.

With weight equally balanced on both feet, and the body erect, as you bring your rifle to your shoulder you should lean back slightly—just enough to balance the rifle and still keep your weight equally divided. The man who leans way back or way forward never makes a good offhand shot—be particularly careful to preserve your balance.

Your left elbow should be well under the rifle, never over to the left. You can support the rifle with much less effort that way. The left arm and left shoulder should do most of the work of holding the rifle horizontally and directing it towards the bullseye. The right hand and arm should do just a little of the work of holding the rifle up, and almost all of the work of holding it back against the shoulder. Do not hold the right elbow either high or low, but at just the height which seems to you most natural, comfortable, and steady. This height will differ with individuals. The photographs merely show the height at which my elbow is most comfortable and steady for me.

The half-arm extension position shows the military and hunting style, which is most practical for snap shooting and rapid fire. The left hand should grasp the forearm just so far out that the angle formed by the forearm and upper arm will be about that shown in the photograph. The sling may be used as shown if desired.

With most men it is not an advantage except on windy days. Still, I should advise all to practice a little with it. If it helps you, use it; if not, have it hooked up tight.

In the body, hip, and palm-rest positions do not begin to aim by aligning the sights below the bullseye, and gradually raising. That may or may not work well in the half-arm extension position, but in the other positions it is very much better to aim high when you first place your rifle to your shoulder, and then allow the rifle to settle down on to the bullseye. It will settle down anyway a great deal as you hold, so it is best to devote your efforts to holding it in a vertical line, and let the sights slowly and gradually settle down to the bull, trying to time the final element of your trigger squeeze to be coincident with the rifle's settling down on to the bull. When you are using a palm rest you can, by practice, find out just how long to adjust the rod of the rest so as to have the rifle point at 12 o'clock when you first assume the position, and then slowly settle down on to the bull, when you should attempt to "freeze" the position so as to give you an interval of steady hold during which you try to squeeze the last ounce on the trigger, or touch off the set trigger if you are using one.

The palm rest, if one is used, should be located on the rifle and adjusted to such a length that both it and the shooter's left forearm will be in almost one straight line from the rifle to the hip. This relieves muscular strain on the arm. Have the palm rest inclined slightly backward. Most beginners adjust their palm rests too long.

Be sure you shoot in comfortable dress. Have your collar, arms, and shoulder free from binding of your clothing. Get your desired grip on the rifle with both hands, raise the rifle high, and place it properly on the shoulder—at the most comfortable and secure place on the shoulder. Lower the rifle, and see if it first comes to a fairly steady, natural, and comfortable position when the sights line up slightly above the bull. If it does not come there, then almost always it is because your feet are not correctly placed—shift them a little and try again. Don't begin the effort of holding until you get a good comfortable stand and position which you feel sure is going to result in your rifle settling down in four or five seconds to a steady hold right on the bull.

At this point we must consider breathing. Many books will tell you to take a big breath before starting to aim, and then hold it during the aim. It has not been my experience that this is the best way. Rather, I think it is better to take two or three breaths just a little larger

than normal, to thoroughly oxygenate the system, as it were, so that breath can be held a little longer than is normally comfortable; and then, with the gun in position and approximately aligned above the bull, stop breathing just as you begin an exhalation (that is, with the lungs about three-fourths full), and, of course, hold the breath while you are aiming and squeezing the trigger.

Right well it has been stated that trigger squeeze is the whole soul of good rifle shooting, and it is very difficult to perform it correctly in shooting offhand. In fact, it takes a long time, and a great deal of practice as I have said, to learn to hold with good steadiness and to squeeze the trigger fairly well in the standing position. No one learns to do these things perfectly every time, and this is why we scarcely ever hear of a possible being fired offhand, or of anyone averaging over about 46 or 47 on the military target. Perfect trigger squeeze, as I try myself to perform it, and sometimes succeed, consists of about the following procedure. As I start to hold my breath, I try to stand as still as possible, and I put quite a little pressure on the trigger, but not enough to run any danger of discharging the rifle. Then I let the gun steady down, trying to steady it down in a vertical line through the bull, and to stop it and freeze just as it gets on the bull; then I try to time an additional steady squeeze on the trigger which I hope will set the gun off just as it



**FIGURE 6. USING THE GUNSLING IN THE HIP-REST POSITION**

steadies down on the bull. Sometimes I succeed and get a bull; sometimes the gun goes off when the sights are not quite on the bull, and I get a close four; and sometimes I don't get the squeeze off at all, and have to take another breath and start again. If I have to take more than one breath I take the rifle down from the shoulder and start all over again. All this, of course, refers to the single trigger, pulling at  $3\frac{1}{2}$  to  $4\frac{1}{2}$  pounds, and is, of course, absolutely necessary that the trigger be free from creep.

When a set trigger is used I personally prefer to have it adjusted so that I can safely rest my finger on it without danger of its letting off, and then in a similar manner to the above, give it the pressure necessary to discharge the rifle when the sights settle down correctly on the bull. Many good shots, however, prefer to have their set triggers so light that a mere touch, applied at the crucial moment, will discharge them, and they do good work with such triggers. I have not been able to shoot well at all with such a trigger, it apparently being necessary for me to feel the trigger with my finger all the time. Perhaps I have been too long trained to the use of the single trigger to learn to shoot well with set triggers, but the fact remains that I cannot do as well with a set trigger as I can with a plain trigger, except in the hip-rest and palm-rest positions, and in rest shooting, and I personally am inclined to look upon set triggers as being useful only in these three forms of shooting. But as I have said, my experience with them has been limited, and I should prefer that someone with a lifelong experience should tell our members the best way to control these triggers in offhand shooting.

Before closing I want to say just a word or two about rifles for offhand shooting. For the military style of shooting I think the rifle ought to weigh at least 8 pounds, and I prefer that it should weigh a pound more than that, and that it should be slightly muzzle heavy. A light rifle, and one that is light at the muzzle, is hard to hold steadily. It moves too fast both vertically and horizontally, and it scarcely ever seems to steady down for an instant or two on the bull as it should. A light sporting rifle is fairly good for snap shooting, but I don't believe anyone can aver-

age very high scores in offhand slow-fire shooting with one. For this military style of shooting, left elbow entirely free from the body, the standard Sporting and National Match types of Springfield rifles, the Winchester Model 52, and the old Winchester single shot with No. 3 barrel, seems to suit me best. I have also done very well with my .32-40 Ballard which has a No. 3 Winchester barrel.

For shooting in the hip-rest and palm-rest styles, a quite muzzle-heavy barrel is very desirable, and the rifle had better be

against. A specially modeled Schuetzen cheekpiece helps a great deal, the hard pressure one can exert with his cheek against it helping to avoid horizontal errors. The ideal offhand drop at heel should be much more than we find proper for prone shooting. I should say that for most men the best drop would be 3 to  $3\frac{1}{2}$  inches. It is a decided advantage to have the comb and sights come up to the face and eye while the head is held fairly erect rather than to have to incline the head downward and forward to have the eye and cheek meet the line of sight and comb. For the military style of shooting, and also for the body-rest position, I think

the large flat military or shotgun buttplate is much

the best, but for hip-rest or palm-rest shooting, the Schuetzen or International buttplate is much superior.

What is possible to do in offhand slow-fire shooting? What scores are possible? Let us speak in terms of the Military Target A, with 10-inch bullseye, range 200 yards. As I have said, good offhand shooting requires a great deal of practice, enough practice to give confidence in one's ability to shoot standing. Confidence counts for a great deal—it helps eliminate buck ague which the tyro suffers from more often than he would care to admit when he shoots offhand before an audience. I think a tyro in his first year can consider that he is doing remarkably well when he averages scores of 42 in the military style of shooting, or 44 with palm rest. In his second season, if he keeps at it persistently, he ought to average 44 to 46 on windless days in the military style, and 45 to 49 with the palm rest. We have some seasoned Schuetzen riflemen with years of experience at that game who, with a Schuetzen or International rifle, will place 7 or 8 of their shots in a 10-inch bull at 200 yards right along on windless days or from sheltered firing points. A strong wind blowing on the offhand shooter's body makes it almost impossible to steady down long enough to squeeze or touch the trigger, and scores suffer greatly. The skilled Schuetzen shot should obtain an occasional possible—not many—say five or six a year. The highest score I have ever personally seen made in the military style of shooting with a Springfield rifle was 49 on the old 8-inch bullseye.

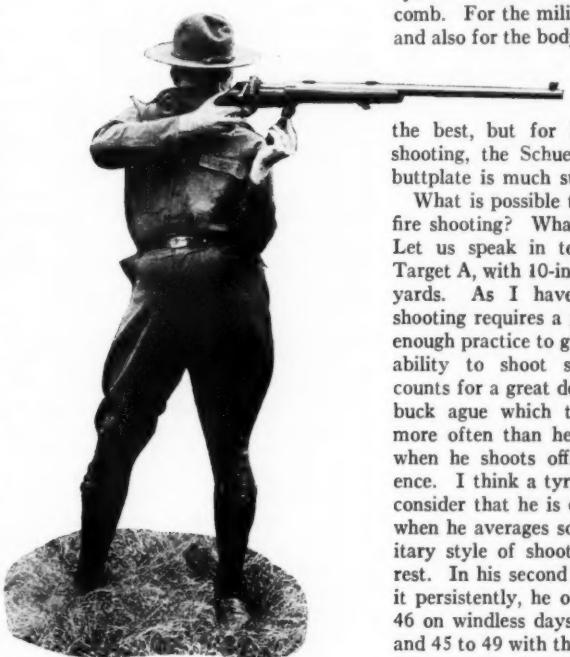
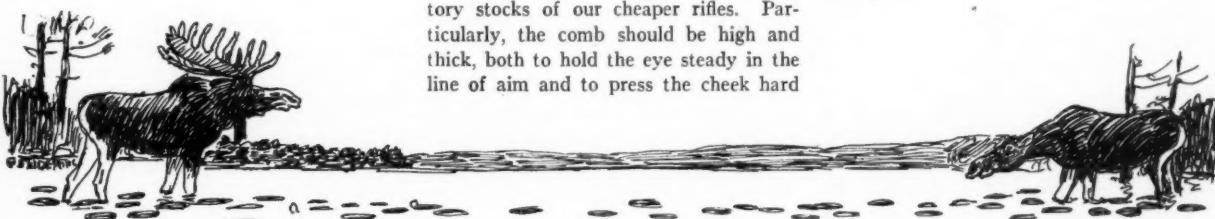


FIGURE 7. THE PALM-REST POSITION

much heavier, say 12 to 13 pounds. I can do good shooting in the hip-rest position with the National Match Springfield, better than I can do in the military position, but for such shooting the Style T heavy-barreled Springfield or the heavy Winchester single-shot and Ballard rifles are much the best.

I regard the rifle stock as very important. It must fit one well, and I have never seen any really good slow-fire offhand shooting done with the ordinary factory stocks of our cheaper rifles. Particularly, the comb should be high and thick, both to hold the eye steady in the line of aim and to press the cheek hard



# An Answer to the Case-Washing Question

By LEROY F. KUEHN

ALTHOUGH many hand-loaders report satisfactory results obtained from ammunition loaded in unwashed fired cases, it is generally admitted that such loading is not the best practice. The user can never be certain of dependability after long storage, and so hesitates to make up a large quantity of his favorite loads during the winter months for the next summer's shooting, which procedure is highly desirable after the experimental stages have been passed and the best load for the individual rifle has been determined. Furthermore, the use of unwashed brass must mean that sizing dies, expanding plugs, etc., are to be brought into action with the benefit of little or no lubrication—the use of sufficient oil properly to safeguard the long, useful life of tools will result in an excess of oil in the cases, which is likely to be detrimental to the powder charge, regardless of how harmless may be the action of residues from previous loadings.

Best results will certainly be obtained in the preparing of fired cases if they are first decapped, and all operations involving working of the brass are performed with the help of some good lubricant, such as sperm oil, which can be easily saponified and dissolved in a caustic solution, and which should be used as freely as possible without causing kinking or crimping of the brass from too much oil. Then, before any new components are assembled, the cases should be subjected to a washing which will at one operation remove burned powder, oil, chips of brass, and all other undesirable matter which may be present, leaving the cases in the best possible condition for their intended purpose.

This is all common knowledge—likewise the fact that a case lying on its side in a pan is not in a position to receive the full benefit of water circulated by boiling—it is necessary that the container be agitated to cause the solution to pass through the case, with the result that when a hundred or more cases are being handled, a certain amount of nicking and deformation of their mouths can hardly be avoided. The same drawback applies to rinsing in clear water. And then at last when the cases have again been brought to the boiling point, with the intention of making them hot enough so that they can be lifted out and allowed to dry of their own heat, the operator receives a demonstration of the fact that water demands a tremendous amount of

heat energy in passing from a liquid to a gaseous state, and that the heat energy stored in a brass cartridge case at the boiling temperature of water is not sufficient to vaporize the water which will cling to that same case unless the excess can be drained or shaken off very thoroughly.

How to accomplish this? It is a nuisance to have to fish cases out of hot water and place them in a drying rack, and they will cool too much while this is being done. If they are shaken in a sieve there is still further danger of deforming the mouths, and the application of dry heat, as by holding the rack or sieve over a gas flame, involves the risk of annealing. Yet we are told that all moisture should be removed quickly once cases have been taken from the water. All this is probably the reason why loaders are prone to omit the washing of their cases whenever they believe that they may safely do so.

Now, suitably designed washing trays have long been in use, wherever it is necessary to clean small metal parts by means of aqueous solutions, so no great originality can be claimed for the device about to be described. It has, however, proven in use to possess a happy combination of features which go far toward eliminating most of the troubles mentioned above, and so the present writing is undertaken in the hope that it may be useful to others confronted with the same problem.

The individual washing tray consists of a square box of No. 16-gauge sheet iron, slightly tapered, and bearing a close resemblance in form to the quart boxes in which berries are often marketed. It holds ten rows of ten cases each, the taper of the tray being ten times the taper of a single case. The smaller, or bottom side is closed by a frame carrying a piece of coarse iron screen, upon which the muzzles of the cases rest. A holding lug, with beaded edge to grip with pliers, is secured to one of the upper edges. Inasmuch as pliers must be used to handle the tray when hot, the lug was chosen in preference to a bail or other form of handle, as providing a more certain grip and not interfering with nesting of the trays for storage when not in use. A cover was considered, but was found unnecessary in practice, and so omitted.

When filling the tray it is placed on bench or table, and tilted toward the user by placing a block of wood under the far side. This prevents cases falling before the tray is entirely filled. Although intended to hold 100 cases, plenty of clear-

ance has been allowed in designing to accept cases not resized full length, which may result in some looseness when full length resizing has been done. In this event it is only necessary to shake the tray slightly and insert an extra case here and there where open spaces appear, in order to make sure that none will incline too much from the vertical position and refuse circulation to the cleaning solution.

It is assumed that the loader will so group his operations that the muzzle chambering will come last, or if this operation is not needed, that he will give each piece a final visual inspection before washing. This requires a separate handling of each case, regardless of its next disposal, and since the cases can as easily be placed in the tray as anywhere else, the filling of the tray is not an operation which will require any appreciable additional time. What little time is required will be more than regained later. It is well to have enough trays on hand to accommodate all the cases which are likely to be washed at any one time; it will not be found convenient to empty and refill trays during washing.

In use, a tray is simply placed in a vessel containing whatever clearing solution the user prefers. A short time, ten minutes at the most, should suffice. The solution should, of course, be deep enough to cover everything but the holding lug, and in boiling it will be seen to gush up between cases and through flash holes like miniature geysers, the parallel arrangement over the screen bottom insuring good circulation.

When clean, this first tray is removed for rinsing, and its place in the cleaning solution is taken by another tray. Rinsing is accomplished by plunging tray and contents up and down half a dozen times in a bucket of clean water, and letting a stream of water from a hydrant strike into the primer pockets. This removes all traces of the first water, and the tray is then ready for reheating in a second vessel, which contains only enough clean water to cover the necks of the cases, and is provided with a lid. Heating is done mostly by the steam under the lid, and the tray remains here until the second one, which is now in the first vessel, is ready to take its place. This process is repeated until all cases have been cleaned. Very little liquid will remain in trays when they are lifted from the second vessel; a drop of water in primer pockets here and there is detected at a glance, and can be removed by a puff of breath before

cooling. If the finished tray is placed where air can pass under it, it will drain and dry completely before it is entirely cool. Washing and drying by this method is quick, convenient and sure—and the cases are subjected to very little abuse.

The accompanying drawing is intended to give full working details for making trays. A few suggestions might, nevertheless, be of help.

Rivets are clipped from annealed copper wire. No. 16 gauge is strong enough, but this requires a  $1/16$ " drill for rivet holes, which will break rather easily if a breast is used,—so unless a small drill press is available it would be better to use No. 10 or No. 12 wire, and a larger drill. Clinching rivets by squeezing in a strong vise is neater and quicker than beating with a hammer.

An extra plate, reserved for use as a drilling template, is desirable. Holes in the template will be  $1/16$ " farther from the bend than in the finished plates, allowing for the thickness of the metal. In making the template, holes in the bent end should be located first, and the bent end of one plate drilled from them; then the bent end of this partly completed plate should be securely clamped to the straight end of another plate in just exactly the position and location it will have when assembled, which will permit the holes in the straight

end to be correctly drilled. The second plate can now be applied to the template, and the holes in the straight end of the template established, thus insuring interchangeability of plates. The template is completed by adding holes for screen frame rivets, of which the accuracy is not so important, and for holding lug rivets, which occur in only 25 per cent of the finished plates.

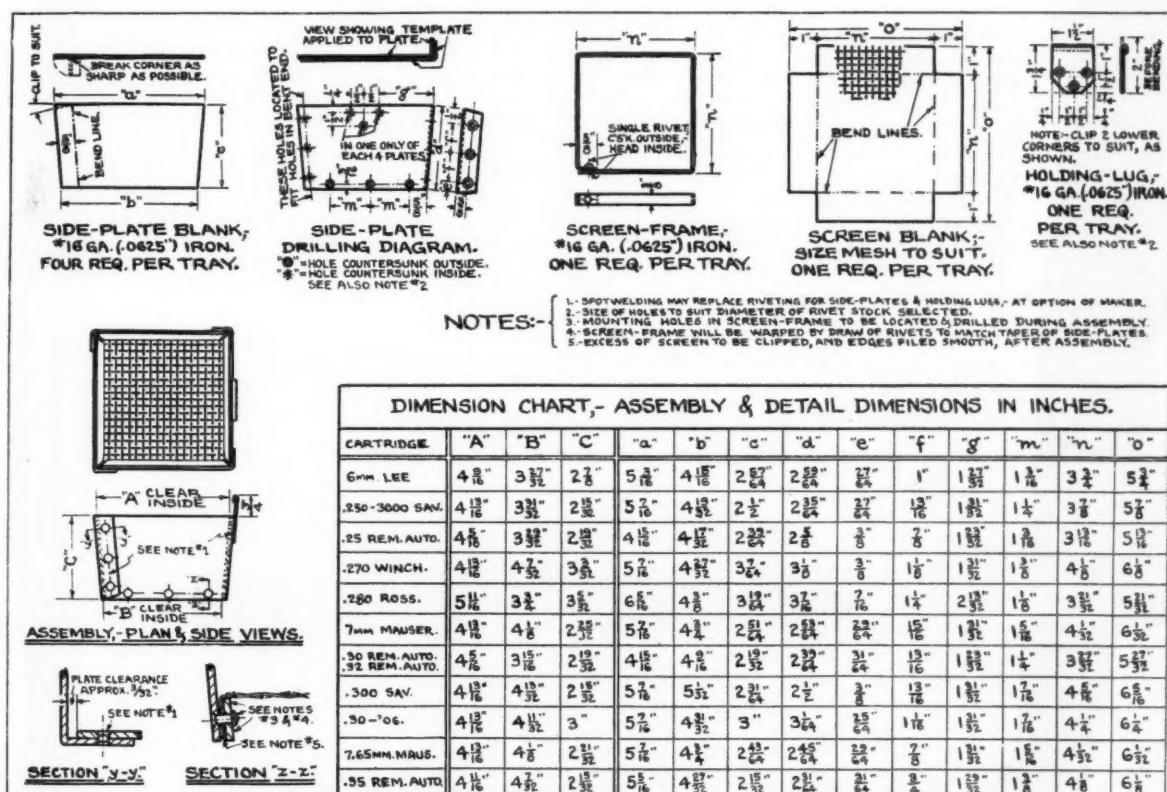
Holes in the screen frame are established from those in the plates after the body of the tray has been assembled and while the screen is being fitted. Clip off excess of screen and file smooth after screen frame rivets have been clinched. If the screen refuses to bend in a sharp angle over the upper edge of its frame, a hardwood block tapped with a light hammer against the refractory point will usually produce a satisfactory fit and a level bottom for the tray. Rivet holes in the holding lugs should be located with the template. With a little care, the template can be made to serve for about a dozen trays before the holes have worn so much as to be too inaccurate for practical use.

If the maker has access to a spot-welder, much of the drilling and riveting can be avoided, but it is recommended that in any event rivets be used for fitting screens, making it more easy to replace them in

case of damage, the screen being the only part much subject to destruction. Select screen of six meshes per inch for cases smaller than .30 caliber, and four meshes per inch for cases of .30 caliber or larger.

The local tinsmith should be able to shear and bend blanks for side plates, also cut strips in random lengths to the correct width for making screen frames and holding lugs. The total cost of all raw material for making a dozen trays should not exceed \$2. The labor of drilling and assembly is another matter, but since hand-loaders usually reckon their labor at nothing where their favorite pastime is involved, the matter will probably not cause any great concern.

It will be noted that many of the vital dimensions on the drawing are expressed by means of letters, bearing reference to a key chart. This was done in order to make the drawing applicable to trays for several different cartridges. Through the courtesy of various different hardware and sporting goods dealers the writer was permitted to take measurements of all the different sizes of rimless rifle cartridges in their stocks, from which data the figures in the dimension chart were computed. Unfortunately, the list is not entirely complete, but it is believed that the majority of requirements have been covered.



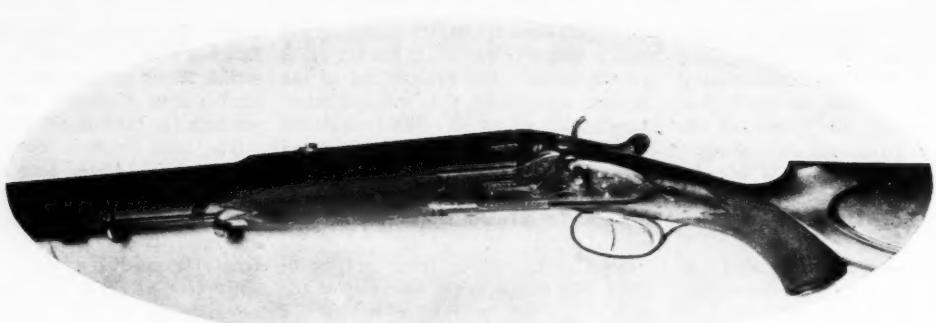


FIG. 1. OVER-AND-UNDER RIFLE BY RUDOLPH HOINIG, FERLACH, AUSTRIA, CALIBER 6.6-70 MM., BUILT IN 1923

## Austrian Gun and Knife Craft

By ALBERT L. GAREIS

WHEN speaking of sporting rifles, shotguns and combination arms, Germany and England are invariably cited as the master gun-making countries of Europe, and only once in a great many years somebody remembers that there are arms factories in Austria. This is due to the fact that Austrian guns are little known outside of Central Europe, the reason for it being that, before the war, the Austrian craftsmen showed little interest in exports. Conditions have changed, but the excellence of the Austrian guns has not.

There are four gun-making centers in modern Austria, viz:

1. *Ferlach*.—A village

in the Carinthian Mountains, comparable with Suhl or Zella Mehlis in Germany, but considerably smaller as to output. Every male inhabitant is a gunsmith, and although the individuals are specializing in the production of certain parts, the majority will accept orders for complete weapons. There are "manufacturers" (fabrikanten) and "gunmakers" (buechsenmacher), the leading firms being Joseph Just and Martin Ogris. The greatest master of modern Ferlach, and my particular friend, Rudolph Hoinig, died in 1925 and I do not believe that he will ever have an equal. One of his O/U rifles was described in an issue of *Field and Stream* in the spring of 1924.

2. *Innsbruck*.—The capital of Tyrol can boast of the largest Austrian sporting-gun factory, which is probably best known throughout Europe. It bears the name Johann Peterlongo. Tyrol, the most beautiful province of Austria, equaled only by Switzerland as regards nature's grandeur, is famous as a rifleman's country. Every Tyrolean highlander is a crack shot, trained in the use of his *Alpenstutzen* (short-barreled rifle) from early boyhood. It is the home of Andreas Hofer, the Austrian Arnold Winkelried, who successfully

stopped the great Napoleon's invasion.

It stands to reason that Tyrol must of necessity build high-class rifles, and Johann Peterlongo, as well as all the small gunsmiths which will be found in every city, town and village, live up to the ancient tradition of producing only the best. The firm of Peterlongo will manufacture rifles and combination guns of every conceivable description, and will equip even the three and four-barrel guns with all modern improvements, including automatic ejectors. As regards accuracy, his weapons are equaled only by those of Springer in Vienna, but surpassed by none in the world.

FIGURES 4 AND 5 ARE OF A MANNLICHER-SCHOENAUER BY JOHANN SPRINGER'S ERBEN, VIENNA, AUSTRIA.

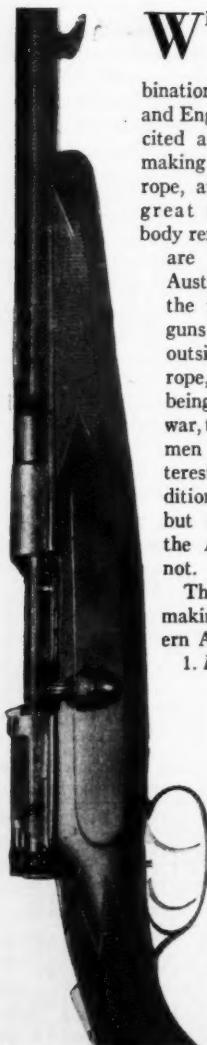


FIG. 4

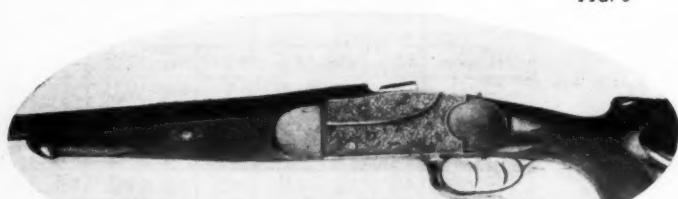


FIG. 5

FIG. 2. SINGLE-SHOT RIFLE WITH FALLING-BLOCK ACTION, CALIBER 8.2 MM., BY JOHANN PETERLONGO, INNSBRUCK, AUSTRIA.



The same applies to form, graceful lines, balance, quality of material, and mechanical perfection; but relative to finish, Springer's guns are unequalled.

3. Vienna.—The beautiful capital of Austria is the home of several well-known gunsmiths, like Johann Springer's Erben, Gebrüder Mulacz, Joseph Kallecki, et al. The firm of Springer produces the finest specimens, comparable in finish to the product of the leading gunmakers of London, like Westley Richards, Purdey & Sons, W. W. Greener, and Holland & Holland. It has one peculiarity in common with its English sisters, namely, that the Springers will flatly refuse to produce an arm which, in their opinion, is not desirable. I have pleaded with them for years to make up a straight-pull Mannlicher Model 1888, but without success. I am happy to say, however, that I have succeeded in persuading them to bring out a repeating rifle, made especially for the regular Hornet cartridge. It will be "the" Hornet rifle, and the Springer Hornet rifle at that, not an adaptation of the action of a heavy high-power repeater to a tiny .22 center-fire cartridge. Moreover, the price is not any higher than that of the makeshifts.



FIG. 9



FIG. 6. HORNET TARGET PISTOL BY JOHANN SPRINGER'S ERBEN.



FIG. 8



FIG. 7



FIG. 3. FOUR BARREL COMBINATION GUN BY JOHANN PETERLONGO. UPPER BARRELS .410 GAUGE SHOT; LOWER BARRELS FOR THE AUSTRIAN "HORNET" RIFLE CARTRIDGE.

rifles, of double-barrel shotguns, automatic pistols with tip-up barrels, bicycles, etc. The Steyr factory is smaller than the Mauser factory in Oberndorf, Germany, but its product shows a better finish and more pleasing lines. What the

Mauser Company is to Germany the Steyr factory is to Austria. My own taste, however, leans toward the gunsmiths who build rifles to order, according to individual taste and of special design. The quantity output of a factory lacks individuality. Nevertheless, in my opinion the Steyr factory produces arms superior in quality, shape, and finish to any other large factory in the world, excepting only Colt's and Smith & Wesson.

It is to be hoped that, sooner or later, our guncranks will purify their taste and begin to consider a weapon not only from the standpoint of utility, but from that of beauty of form as well. Then we shall not see the monstrous beaver-tail forearms, nor swollen stocks and shapeless actions. In order to give my views on the difference between the product of the various countries, be it said that Austria equals England in mechanical perfection, surpasses Germany in form, and hopelessly out-classes all other nations, excepting only the U. S. A., in accuracy. As regards stock-making

(Continued on page 32)

# Six-Gun Improvements and the Berns-Martin Speed Holster

By ELMER KEITH

ANY Colt or Smith & Wesson fixed-sight revolver can be easily target sighted. With the Colt Single Action and new service guns it is necessary to make a band-type front sight for best results. Of course a higher standard front sight can be fitted, but it is not as good as a band front sight with separate blade. The Colt Official Police has a front sight like that of the fixed-sighted Smith & Wesson guns. This type of sight has a fairly broad base, then is cut away about half way up to form the blade or front sight proper. Such sights, both Colt and Smith & Wesson, may be easily changed by cutting off the front blade down to this wider base, then milling a slot the full length of the base and fitting a blade front sight of any desired height, width or shape. This blade may be anchored with either a pin or a screw, the latter being the more convenient, as it facilitates the changing of blades when necessary.

Blades may be made sloping down from front to rear so that they will not catch in quick-draw work, or they may be made of the Call type with gold bead, and in any width to suit the shooter. They may also be made adjustable for elevation for the target shooter. I have used a 1917 model Smith & Wesson that H. W. Bradley of Salmon, Idaho, fitted thus with adjustable front sight.

For fitting an adjustable rear sight, there are a great many arrangements, both good and bad. The top of the frame may be milled out and a rear sight like the Smith & Wesson target fitted, though this type of target rear sight is very susceptible to damage in carrying or in severe usage. The best and cheapest target rear sight I know of is the Colt .22 Automatic sight dovetailed into the rear end of the revolver frame. With the sighting notch cut out to correctly conform with the front sight, this makes an excellent combination and is very strong and dur-

able. This type of sight can also be cut off up to the top of the dovetail and another base welded on with an extension, thus setting the sight proper about  $\frac{1}{2}$  inch to the rear, just out of the way of the hammer. This gains  $\frac{1}{2}$  inch in sight radius. The front sight may be made with the blade having its highest or sighting portion as far forward as possible, and so gain another  $\frac{1}{4}$  inch in sight radius. I used for some time a 1917 Smith & Wesson revolver sighted as above, with excellent results, doing some of my best long range shooting with it.

Two other ways of gaining sight radius are by flat-topping and extending the frame back about  $\frac{1}{4}$  inch, or welding on an extended sight base. Frames may be either blued or case hardened in colors; H. W. Bradley employs the latter method, which I really believe is the better. I believe O'Meara usually blues his frames after flat-topping. There is a lot to this flat-topping. Properly done it adds materially to the efficiency of the gun. I have seen several frames that were not properly flat-topped, the barrel threads having been burned so that the barrels had to be sweated in the frames. Such a job is no good. Bradley recently turned out the best flat-top S. A. job I have ever seen, the threads not hurt in the least.

Both Colt and Smith & Wesson double action heavy caliber guns may be easily converted into really efficient pocket guns, or so-called Detective Specials. With the Smith & Wesson the barrel should not be cut off shorter than just flush with the forward end of the ejector latch; then a band front sight can be made up and the lower

part of the band cut away so it will fit just above the ejector latch. It can then be both sweated and pinned to the barrel and make a very neat, strong job. Either the standard fixed sight can be used on the rear, or one of the special rear sights. The Smith & Wesson will be found a very good fit for most average size hands. The Colt New Service will be found ideal for men with extremely large hands, and can be cut off to the ejector rod, making a very short gun. If such guns are to be used only double action, as McGivern uses them, then the hammer spur can well be cut off, leaving nothing to catch in the pocket or on the clothing.

Many men have extremely long fingers, and have trouble getting their fingers into the trigger guard as quickly as they should under stress of excitement, or in extreme speed tests. For such the best and only cure is to cut out the front portion of the trigger guard, so that there is nothing in the way to prevent the trigger finger from finding the trigger in the least possible time. Berns cuts out his slip gun trigger guard this way, as does Fitzgerald of Colt's. Newman often cut his trigger guards away entirely on his slip guns. Newman's pocket guns were a pair of  $2\frac{1}{2}$ -inch .45 Colt slip guns. He habitually carried these guns in his front trousers pockets.

The base pin of the S. A. Colt can be improved by making a new one of tool steel with a large head that is easily grasped for removal. Also the base pin catch as regularly furnished on S. A. Colt guns is totally inadequate for heavy caliber guns with full loads, and will nearly always fail to hold the base pin in place under extreme recoil. There are several methods of curing this trouble. A longer and stiffer spring may be used, which often does the trick. The old screw-type base pin catch is better. The best base-pin catches I have ever used



MODEL 1917 S. & W. FITTED WITH ADJUSTABLE TARGET SIGHTS BY W. H. BRADLEY

were designed by Harold Croft, in two general types. One is a lever fitted into the front of the frame, that locks crosswise of the base pin. This has a small spring plunger, fitted at my suggestion and similar to the old Sharps, to hold the lever in place. The other catch that Croft designed is much more simple, more easily fitted, and to my notion is the best of them all. The hole through which the regular spring screw type of catch is fitted is drilled out slightly larger, and a pin with a small lever at the right-hand end is fitted in this hole.. The pin is cut away at one point, so that when the lever is turned up, the base pin can be removed or slid back into place. When the lever is turned down, the round body of the pin locks tight in the corresponding cut in the base pin. There is also a small pin on the inside of the lever at the bottom, that locks in a small hole on the side of the frame, when the lever is turned down. I shot over 500 of the very heaviest black-powder .45 Colt loads through one of Croft's guns so equipped, and there was never the slightest sign of loosening of the base pin.

Croft and Sedgley designed a main spring similar in shape to the one employed in the Colt Officers' Model. This spring speeds up the action somewhat, and has never given the least trouble. However, I do not believe it will stand as much abuse as the Newman spring. The latter is slower, but is unbreakable; it cocks very

softly and easily, and is always sufficiently strong to fire the primers, and with the minimum of jar.

When frames are flat-topped and extended, or just an extended rear sight base is added, then the top of the hammer is cut off to allow the hammer to go in under the extension. This also lightens the hammer jar and speeds up the action. Hammer spurs can be cut off and welded on in a lower position, and the general contour of the thumb-piece altered to conform to the general design of the Bisley thumb-piece. The Bisley thumb-piece is by all odds the nicest and best hammer spur of all, though one has either to remodel a Bisley or wreck one to get the thumb-piece to weld on to the S. A. hammer. Hammers are carefully

in a Single Action a loose firing pin, entirely separate and detached from the hammer. This enables him to further lighten the hammer, and does away with any possibility of the firing pin hole in the recoil shield enlarging; and it is also an improvement on the recoil shield or plate. Bradley has now gone a step further and made up a rebounding firing pin for the S. A. similar to that in the .45 Colt Automatic. The pin being itself shorter than the distance between hammer face and primer, the gun is absolutely safe with all six chambers loaded. The hammer is best carried right down on the frame, and no amount of pounding on the hammer will fire the gun. A spring holds the firing pin back to receive the hammer blow, the pin being driven



TWO .38 COLT LIGHTNING MODELS, UPPER ONE WITH GRIP CHANGED BY BRADLEY



SINGLE ACTION FLAT TOP WITH REBOUNDING FIRING PIN, SPECIAL BASE PIN, AND GRIP SIMILAR TO CROFT GRIP EXCEPT CUT DOWN TO FIT A SMALL HAND. BASE PIN CATCH NOT YET FITTED. WORK DONE BY BRADLEY



A CUT-DOWN MODEL 1917 S. & W. REVOLVER

rehardened after this work is done.

Single Action guns may be quickly converted into slip guns by the removal of the trigger and the addition of the Newman slip hammer and main spring. If it is desired to lighten the regular S. A. mainspring, this may be easily done by loosening the mainspring screw and putting a leather shim under the lower end of the spring, below the screw, and then tightening the screw. Any desired stiffness can be secured by the use of shims of different thickness.

Single Action Colts may be made safe with six cartridges in the cylinder by the addition of another bolt cut on the cylinder so that the cylinder can be locked between chambers. Croft designed and had fitted



LATEST DESIGN OF  
BERNS-MARTIN  
HOLSTER

forward like a bullet and continuing to move after the hammer has come to rest against the frame. The momentum of the firing pin explodes the primer. I believe this is one of the greatest improvements recently made in the S. A. Colt.

The safety and half-cock notches should be cut off the Single Action hammer before it is re-casehardened. These are not necessary, and cause much trouble when the gun falls into the hands of a novice or someone not familiar with the S. A. Of course if the gun be a slip gun, these notches make no difference.

Anyone interested in the Single Action Colt should read Mr. Hathaway's article in *THE AMERICAN RIFLEMAN* of April, 1927. For the benefit of those who have not a copy of this issue, I will briefly cover some of the more important changes to hammer, bolt, and bolt-and-trigger spring as described by him. First, take the hammer. The little sharp-cornered pin that times the release of the cylinder bolt is usually furnished about twice as long as necessary, and thus causes the bolt prong to be sprung in twice as far as necessary. This sometimes causes the bolt prong to break, especially in very cold weather. Grind this pin down, perfectly flat and parallel with the surface of the hammer from which it projects. Grind it off about

half way down to the hammer, or until the remaining portion of the pin is equal in thickness to the bolt prong that it actuates. Care should be taken not to alter the slope of the pin as that would change the timing of the bolt. Next, take the bolt. Determine first if the bolt is drawn down farther than necessary to release the cylinder when the cocking operation is commenced. If so, then the end of the bolt prong that works in conjunction with the above-mentioned pin on the side of the hammer, should be carefully dressed off, a little at a time until the bolt is just drawn down flush with the frame, thus greatly lessening the amount of bending imposed on the bolt spring. Next, take a small, round jeweler's, or so-called "needle," file, and round out the end of the square dividing cut that separates the two prongs of the bolt. Breakage usually occurs where the operating prong joins the main body of the bolt. Rounding out this sharp inside corner greatly lessens the liability of breakage. Next take the bolt-and-trigger spring. The bolt spring, or shorter prong of this spring, is where the grief usually occurs if at all. This bolt half should be tapered from the base out to the tip, where it bears on the bolt, such tapering to be in the thickness of the spring, and not in the width. If this is done carefully, there is mighty little possibility of a bolt spring ever breaking. Pay no attention to the slight upturn at the end of the spring, and file just as if the spring were flat, removing the upturned tip. This spring should be tapered to about half its thickness on the extreme tip, and should be an even, gradual taper from full thickness at the base, to the tip. It is very important to file lengthwise of all springs so that no scratches will result across their surfaces that might in time form cracks. Personally, about the only trouble I have ever had with S. A. parts breaking has been with the bolt and the bolt spring, and this in extreme cold weather in Montana before I learned to properly alter these parts. At that, I have never had more than two of each part to break, and none since I began altering them. The hand should be cut off until it just does turn the cylinder into place, and no more, when the hammer is pulled all the way back. If it tends to turn the cylinder past center, then it is very hard on the bolt and bolt cuts in the cylinder, and also

on the hand itself. If all the moving parts in the action are carefully hand-polished, the smoothness of the action can be improved very much. The S. A. Colt is not obsolete, and I doubt if it ever will be.

Most double action Colt and Smith & Wesson guns are very carefully fitted and finished inside, and there is seldom any work necessary on their actions, except adjusting trigger pulls and the lightening of the Colt double action mainsprings for extreme rapid-fire double action work. I believe Ed. McGivern of Montana uses all Colt double actions with the mainsprings as issued, and he shoots double action altogether for fast aerial or group shooting. He has followed this trick in exhibition shooting, as well as practical self-defense work, for a good many years, and no doubt his trigger fingers are very well developed, and a little difference in the weight of the D. A. pull does not apparently bother him in the least.

Although I have used a six gun practically all my life, I had never until recently attempted aerial shooting or any double action shooting except the occasional bust-



IN ACTION  
THE HOLSTER

ing of a beer bottle thrown up by some cow-puncher friend, and a little fast hip shooting from an old rod-ejector D.A. Colt. I have known that McGivern could make six hits on fairly large tin cans thrown up by an assistant, using a .38 Special O.M. Colt. I have often heard men say that it couldn't be done, but for my part I know McGivern would never have claimed to do this stunt unless he had actually done it, and done it many times at that, as he is always very conservative in reporting his work. Also, John Newman managed to fire six shots from a slip gun at a can thrown up around 18 or 20 feet in the air, making four or five hits, I have forgotten which. Through the kindness of a gun cranks friend I had the opportunity to try this stunt myself with a new .38-44 Smith & Wesson, with various loads. I started in a few days before Christmas, and though I was able to get off only one shot at the beginning, and quite often missed that one shot, I soon worked up until I was making two, and often three, hits. I threw a gallon

can up left handed, and fired right handed. I practiced quite a bit, snapping on empty cases. By Christmas I had made five hits once, and once had put all six shots through a can before it came down to the level of the gun. This with Standard Western full-power loads in the .38 Special. I managed to make four and five hits quite often after a little more practice, also the same number with the Western Super Police loads, which have a little more recoil, which slows one up. I tried two different Officers' Model Colts, but found the mainsprings too strong to make more than four hits. I guess my finger isn't as strong as

McGivern's. I need about 20 years more practice. With the Smith & Wesson I found that I could turn the mainspring tension screw out three to four full turns and still fire the cartridges. This is a great help to a fellow with a weak trigger finger, raised on the Single Action. I tried a box of Remington Kleanbore .38 Short Colt cartridges with outside lubricated bullets, in the same .38-44, with the net result that

caliber, with the mainsprings lightened as much as possible; the new K-.22 Smith & Wesson, and the new Colt Ace. I do not like the Smith & Wesson .22-32. It is so light, especially in the barrel, that it feels much like a fly rod in the hand. The Colt Woodsman is very much the same.

Personally I prefer the Government model Colt automatic to any and all other automatics. The Ace, the Super .38, and

the .45 will make a most excellent outfit for the users of automatic pistols. The Super .38 and the .45 could be greatly improved by fitting them with higher, adjustable sights. The later issues of the Super .38 came out with wide front and rear Partridge type sights, which are a great improvement over the older sights. Of course sights of any design can be easily fitted to these guns, and when this is done it is much easier to do the fine shooting with them that they are really capable of doing. O'Meara, Jas. V. Howe and Bradley are equipped to do any of the remodeling jobs I have mentioned.

The Croft No. 3 grip is the only one that is

any improvement over the standard S.A., and then only for slow fire. This is a most excellent grip for any deliberate shooting. The hammer must have a base welded on like that of the Bisley to fill the cut in the high back strap when this grip is used.

Six-gun grips can be changed to almost any desired shape and size. This is accomplished by cutting off, welding, and bending the straps to any desired shape. Of course the straps of the S.A. and the first model of Colt D.A. guns are the easiest of all to alter, but other guns may be changed if necessary. An example of this is illustrated in a first model Colt, a



HOW THE BURNS-MARTIN HOLSTER IS WORN

my last five strings of six shots each were all hits on the gallon cans. Of course these little loads had no recoil at all and enabled one to stay on the can much more easily. I am going to try this stunt with the slip gun next, and then try it on smaller objects. This shows what progress even a S.A. man can make in a short time and with only 500 rounds of ammunition. The Colt mainspring could be cut down so it would still fire the primer and greatly speed up the action for fast work.

When beginning this sort of work I believe the best guns would be the new Colt Officers' Model and Official Police in .22

.38 or so called "Lightning" model, altered by Bradley. The original and improved grips are shown for comparison.

Many grips can be completely and easily changed by restocking with larger grips of wood or ivory. In wood, only Circassian walnut should be used. It is hard enough to take the checking properly, and thus make a good job, and one that will last. To my mind, nothing equals good, full, elephant ivory grips, with the right or left grip (depending upon which hand the gun is used in) carved in relief. Such carving fills out the hollow of the hand and affords a very secure hold. Even plain uncarved ivory has a sticky feel when any appreciable pressure is applied, and is not slippery like pearl or hard rubber. Any design, almost, can be employed, such as an American eagle, Mexican eagle, ox head, buffalo, Indian head or eagle head. I recently saw a friend's .44 S. & W. fitted with carved ivory depicting a full African lion, and it made a very fine and beautiful grip. Ivory gradually colors with age, like an old meerschaum pipe, which adds greatly to its natural grain and beauty.

\* \* \* \* \*

When a sailor, and especially one who has been a member of the Navy Rifle Team for a good many years, gets marooned for shore duty on the coast of Alaska for any length of time, he is apt to think things, and has plenty of time for so doing. Then when said sailor gets a chance again to associate with his old cronies, he is apt to put some of his thoughts into action.

Such is the case with one J. E. Berns, not unknown to these columns, or to Camp Perry. It so happened that friend Berns got marooned in Alaska with a 7½ inch S. A. Colt slip gun, and no proper way of carrying his artillery. Berns found that when he packed this long gun in an ordinary open-top holster, it projected down his leg quite far, and was apt to get into the snow he was wading through. He also found that this longer gun was much slower to get into action from the holster, as it required raising quite high to clear the holster. Still, he liked this long gun, especially for game shooting, and set to work to devise some sort of holster in which he could carry it rather high when hunting on foot, and in which it would also be well hidden under the coat in street attire, and still be easily and quickly accessible from this high-belt position. Being a fine target shot and used to having his sights smoked black to prevent reflection and glare, Mr. Berns also wanted a holster that would carry the gun without rubbing the soot from the sights.

While at the job Mr. Berns decided to include several other important features in the new holster design. The photos tell how well he succeeded. In this work he

was fortunate in having the assistance of Mr. Martin, also of the Navy Rifle Team, who is not only an excellent shot, but a very skillful leather worker as well.

I had the pleasure of trying out the first two of these holsters that were made, and found that for a long-barreled six-gun, if not for any six-gun, and for a right or left-hand draw from the hip, this was the fastest rig I had ever encountered. This is the only belt holster that I know of that permits the wearer to get his gun quickly from the high-belt position on the right or left side, and it does not make any difference what the length of the barrel may be. Of course when the gun is worn under a coat, the cross-draw holster and a short gun are a faster combination; but many officers prefer a gun on the right hip, especially in warm weather when the coat is worn unbuttoned, as the right hip position is not so conspicuous.

For the peace officer's use this holster has many good points. The housing, that completely covers the trigger guard, absolutely prevents the gun from being pulled out by anyone from behind. There is a sole-leather shoulder fitted snugly to the muzzle, which holds the gun tight in connection with this trigger-guard housing. The holster is fitted with a block of sole leather or plastic wood under the trigger guard. A bolt locks this securely to the back portion of the spring, which is much like the spring of the shoulder holster. Leather stops are fitted on each side of the belt, preventing the holster from sliding during the draw. No leg strap or tie string is needed on this holster, unless one is breaking saddle broncos, when of course he must needs tie his gun down to prevent the hammer spur from striking his elbow. I have had this occur while riding hard bucking horses.

One can get a gun from this holster from many positions in which it would be extremely awkward to draw with any regular open-top holster; while sitting in a car seat, for example, or at a table. This outfit is much faster, especially for a long gun, than any other in existence today. With a shoulder holster one is compelled to change or shift his grip on the gun after drawing, before he can shoot. This is not necessary with the cross-draw and regular hip holsters, but the gun must be drawn up clear of the leather before it can be poked ahead at the target and fired. With this Berns-Martin Speed Holster all that is necessary is to jerk the gun out of the holster straight ahead toward the object, firing as the wrist snaps the gun up into line. With a little practice in gripping the gun the same each time, it can be drawn and fired, and a hit recorded on the man target at 10 yards, in  $\frac{1}{4}$  second or less if the hand is on the gun at the start; and in  $\frac{1}{2}$  second or less if the hand is a foot or more above the gun.

When one is facing the target or adversary, he can make a hit quicker from this type of holster than from a cross-draw holster. For one thing, the gun is jerked straight toward the target, while the cross draw necessitates either turning the whole body sideways to the target, or else stopping the swing of the gun and arm at the right instant to line it up with the mark. I do not believe there is any method of packing a gun that is as fast to get into action with as a holster hung low on the right leg, if the gun hand is away from the gun at the start of the draw. Of course, this applies to wearing the gun openly without a coat. When covered by a coat, then I believe the cross draw is the faster, as the left hand can be used to pull the coat out of the way at the same instant that the right hand goes for the gun. The coat must be worn partly buttoned, though, or the gun will show. This speed holster is less conspicuous than a cross-draw holster, and the coat can be left open if the gun belt is also used for a waist belt.

This Berns-Martin holster is the only one I have ever seen that does not in any way cause wear to the front sight of the gun. Even shoulder holsters wear the front sight, as this sight takes all the pressure when the gun is jerked out. This wear soon changes the elevation, to say nothing of rounding off the corners of the sight. With the new holster, no leather comes into contact with the sights. This is a great boon to the target puncher, as he can blacken his sights at home, put on his coat, and go to the range with the perfect assurance that the sights will still be blacked when he is ready to fire his string. These holsters can be made either right or left hand.

Martin uses only fine bridle leather in the manufacture of his holsters, doing all the sewing by hand with heavy thread. He does a most excellent job of fitting the holster to the gun. The fit of the gun in this holster is very important, and only the gun for which the holster was originally made should be used in it. Martin only makes up these outfits together, that is, belt and holster complete, so as to insure the holster working properly. Belt stops must be sewn on each side of the holster to prevent the latter's tipping in drawing, and to insure its remaining in one fixed position on the belt. In the place of the belt stops, cartridge loops can be fitted on each side of the holster, if desired. Martin usually stains and polishes the leather to a rich dark russet color.

The cylinder clasp or spring holds the gun very securely. The holster can be inverted and shaken without the gun coming out, yet the gun can be drawn instantly. This is very important for an

(Continued on page 32)

# Mr. Alibi

By E. H. STUERMAN

IS ALIBIING a necessary part of the shooting game? Is an alibi more conducive to pleasure, or is it a form of excuse that softens the sting of a bad score or match? Probably there are many reasons why some shooters persist in this mode of explaining poor marksmanship; and then again, perhaps the alibi has a definite place in the target game, much as peanuts and pink lemonade have at the circus—take them away and there would be no circus.

Anyway, the alibi is a great institution in this game of ours. Witness the end of almost any match, and the alibis will be flying thick and fast as to why the winner should have been somebody else. Alibiing has developed into a fine art, and some alibis are masterpieces.

Every club has its share of alibi artists, and the club of which the writer is a member is not an exception; in fact, I have never been in any group of shooters where alibis have not made their appearance at the end of the shooting, whether it be at targets or tin cans.

Some of these alibis we hear are quite amusing, while others require a considerable stretch of the imagination if one is to credit them. Some of these alibis you no doubt have heard, and if so, just pass them up with the firm conviction that these certain ones have taken on a national prominence.

One of my shooting friends is a reasonably consistent shot, but nevertheless is human, and will at times "blow" a couple. His alibi nearly always is that he just ate a hearty meal and cannot shoot on a full stomach, and this regardless of the time of day or night that the aforesaid "blows" occur. Another alibi of this man's lays the blame on smoking when he is off form. Then there are the fellows that in their own estimation worked too hard during the day, which had a tendency to unnerve them. Another had a date with his best girl for the following evening, and this caused him to shoot erratically. Then there are the alibis on the guns, the ammunition, the range, the weather conditions—*ad infinitum*.

Crediting the alibi as deserving of a place on any shooting program, it is in a way acceptable after the match, but some of these artists even have their alibis hashed up before the shooting ever begins! Granting that the alibi is only a tolerable nuisance, did you ever realize that there are only two kinds of alibis—the controllable or personal alibi, and the uncontrollable one? The controllable or personal alibis are those based upon per-

sonal characteristics or habits, while the uncontrollable ones depend upon the elements and other matters beyond personal control.

Now, getting down to brass tacks, doesn't it seem possible that the controllable alibis are a matter for personal care and attention? If a shooter knows that doing this or that prior to a match is going to be detrimental to his score, why does he persist in doing it? Is it a lack of willpower on his part? Or has this alibi business taken such a strong hold on him that his match is not complete unless it is followed by an alibi. Naturally, the uncontrollable conditions as to the weather, light, wind, range conditions and other natural factors that enter into a match, handicap not only the alibi shooter, but also everyone else in that particular match as well. So why the alibi? Is it a frank admission that the other fellows have greater ability to cope with the situation? It looks that way.

Personally, I don't see how alibis help the shooting game in any way whatsoever. To me they are an indication of selfishness—that the individual places himself over and above the game itself. They show a lack of true sportsmanship, and they certainly do not help the shooter. The fellow so inclined, with his alibi already made up in advance in case he loses, does not put that extra effort into his shooting, or that last ounce of "guts" into squeezing out a winner in a hard-fought match. He places all his confidence in his alibi, feeling a sense of complacency that his alibi will amply excuse him in the eyes of his team or fellow-shooters. Maybe it does with some, but in the opinion of most of the fellows this alibi business is being overworked.

There is a certain individual I know, who comes out to the range all bluster that he is going to put every shot in the black. He fires, and his target shows his true ability, which is about half in the black and the other half a nice shotgun pattern over the white rings. He immediately announces that his gun barrel is out. He has repeatedly sent his arm to the

manufacturer with this complaint, and the manufacturer has once or twice fitted a new barrel, but has sent along targets made with both the questioned barrel and the new barrel, and no difference has been evident as to their respective shooting qualities. Both barrels were A-1, and the man had absolutely no kick coming; but through the graciousness and generosity of this particular manufacturer, his whims were acceded to, and for the moment Mr. Alibi won his point. Of course, this chap is a very poor sport, and his tactics have been criticized repeatedly by the rest of the fellows. If this man spent half the time in practice to improve his marksmanship that he spends in complaining and alibiing, he would be a reasonably fair shot.

Of course, not every fellow in the target game is an alibi slinger; in fact, I am glad to say that the majority of shooters are not, but there are just enough of the alibi men in the game to tend to take the sportsmanship out of it. My creed in shooting, as in any other sport in which I participate, is to go in to win—to put forth the very best efforts possible; but if I lose, to give full credit to the winner, cheerfully and sincerely, take the lesson learned, and try to improve for the next match.

Did you ever know an alibi artist to congratulate the winner of a match in which he himself shot? I never have, but I have countless of times heard him vociferously proclaim to the world the reasons why he did not win, and, peculiarly enough, none of his reasons referred to any fault of his own.

Side by side with the alibi artist is the chap who cheats, either in friendly practice or in matches. Say what you will, there are one or two of these to be found almost anywhere, and lucky is the club that can truthfully say that their membership is 100 per cent sportsmen.

After all is said and done, what is to be gained by making excuses or cheating? We are in the game for the fun and sport that is in it. If there are cash prizes up, the amounts are so small they hardly mean anything one way or the other.

Please do not misinterpret all this to mean that I favor a weak-kneed, sissy game. I certainly do not. I stand for putting the best and everything a fellow has *that is fair* into a match, to win, but I certainly detest the "cry-baby" loser, and I believe I am not alone in this. So let's hope that these minority alibi men and cheaters will eventually face about and become a credit to the game.



# Hollow-Point Bullets

By BYRON E. COTTRELL

THE casting of hollow-point bullets has always been a mighty slow job and but few riflemen have ever bothered with them. There is no doubt but what they are superior to solid bullets for game shooting. Most of us tried that out in shooting small game with a .22 rim-fire, years ago. A red squirrel hit with a hollow-point .22 was killed much more quickly than one hit with a solid bullet, and the hole where the bullet came out was much larger.

I have always wanted to try hollow-point bullets in modern rifles; but they could be obtained in plain-base form only, and I could never see any reason for this. The gas-check bullets have the greater velocity and killing power, and they were the ones I wanted to try on game with hollow points. I had to choose between these two, and I preferred the solid gas-check bullet at around 1,800 feet per second to a plain-base hollow-point bullet at 1,200 feet per second. So I have never spent much time with the hollow-point bullets.

Some time ago I noticed an advertisement of a hollow-point attachment in the RIFLEMAN that could be fitted to any mould; and after writing Mr. McNeely, the maker, I sent him two of my moulds to be fitted with this attachment. One of these moulds was for the Ideal 138-grain gas-check round nose .270 Winchester bullet, and the other was the .30-caliber Squibb 169-grain gas-check. The maker says that these attachments can be put on by anyone handy with tools, but let me advise sending the moulds to the maker, as it is pretty delicate business drilling holes into the points of bullet moulds, and McNeely makes a nice job of it.

With this attachment it is just as easy and *just as fast* to make hollow-point bullets as it is to make solid bullets in common moulds. The attachment is entirely automatic in operation, and you simply go on making bullets as you always have.

I have tried out both these bullets for accuracy, but as yet have not tried them on any game—am just waiting for the woodchuck season to come in, and then I can tell you all about it; but in that time you can get your own hollow-point moulds, and be trying out your own bullets, which is the most satisfactory way.

I cast a lot of these bullets from pure lead in both sizes, and another lot from regular hard mixture the same as I always use for gas-check bullets. The soft bul-

lets would naturally mushroom better, and therefore I wanted to try them.

With the pure lead bullets I found I could get very good accuracy with 12 grains du Pont No. 80 in either the .270 or .30-06. When using more powder in either rifle the accuracy was not so good. Those bullets made from regular bullet metal gave very accurate results in the .30-06 with 23 grains No. 80. My average groups at a measured 45 yards with this load were only  $\frac{3}{4}$ -inch. I was using Lyman's No. 48 rear and a target front sight. The velocity of this load is around 1,800 feet per second, and gives a good hunting range of 150 yards. The charge of 12 grains No. 80 with the pure lead bullet gives a velocity of around 1,100 feet per second, and a practical hunting range of not over 75 yards. It is a question which one will be the best killer on chucks, but I believe the load with 1,800 foot seconds velocity will be the most practical.

Now with the .270 Winchester the 12 grains No. 80 and pure-lead bullet gave very accurate results—about 1-inch groups at 45 yards, and the velocity I believe is around 1,300 foot-seconds. It gives a little more range than the similar load did in the .30-06, and I believe would be very satisfactory for hunting chucks up to 100 yards.

With the hard .270 bullet I found 18 grains No. 80 a good load. It gave 1-inch groups at 45 yards, and would carry up finely to 150 yards. I believe the velocity to be around 1,700 feet per second. I tried this bullet with 27 grains Hi-Vel, and it shot to nearly the same sighting as the full charge. There were no signs of leading or other trouble; but the accuracy was only about  $2\frac{1}{2}$ -inch groups at 45 yards. I have an idea that 23 to 25 grains of

Lightning might give a very fine load, but I have no Lightning on hand.

I also tried 16 grains No. 80 in the .270 with this bullet of hard metal, and I got the smallest groups of all at 45 yards—six shots that would not have broken a circle the size of a dime! This is the load I will use most because of its fine accuracy. The velocity I believe to be around 1,500 feet per second, which should give a good hunting range (on chucks) of at least 125 yards.

The shooting with the Winchester .270 was done with a Noske Field scope on one rifle and a B. & M. Hunter scope on another.

Since the above was written I have had the opportunity to try the bullets on woodchucks. Using the .270, I first tried the soft lead bullets at rather low speed—all the speed this soft bullet would stand. The results were no better than with solid bullets, so far as I can tell. Next I tried the bullets cast from regular alloy and driven with 16 grains No. 80. This load is a very good killer. The holes at exit are not so very large—only about  $\frac{1}{2}$ -inch, occasionally 1-inch; but very few chucks ever get into their dens after receiving one of these bullets. I used two .270 rifles. One will handle 18 grains No. 80 perfectly, while the other doesn't give the best accuracy until the charge is reduced to 16 grains. Chucks shot with the 18-grain loads were blown up more than those shot with the 16-grain loads. This proves to my satisfaction that in modern rifles hollow-point bullets should also be gas-check; otherwise they cannot be given enough velocity to be of much advantage. In larger calibers this might be different. In the .30-06 I used 23 grains No. 80, and the results were about the same as with the 18-grain load in the .270. However, the .270 is my favorite gun, and I have done most of my shooting with it. I have the hunting scope set for full charge loads, and the Lyman No. 48 set correct for the gas-check load. On practically all shots under 150 yards I have used the gas-check load, and I like this combination the best of anything I have tried yet—never have to change the sights; just shoot either load I wish.

I like these bullets a lot, and use them for all small game. I will carry a few of them with me when I go deer hunting, and if conditions are right will try them on deer. They seem to have more killing power than one would expect.



# Slug Loads for the Shotgun

By KARL M. FOSTER

THIS article begins with the memory of a cold winter's day in December a few years ago, when the writer, after a hard day's hunt, jumped a buck in an evergreen swamp. The gun carried that day was a 20-bore pump, loaded with ball shells, as rifles are barred in Massachusetts' deer hunting. The first shot was a miss, and the buck stood for five consecutive shots at a range of not over 60 yards. The last two shots were fired with a rest over a fallen sapling, and the sixth shot connected, not on the vital shoulder area where the gun was held, but on the rear quarter, breaking the leg high up. This buck, unable to locate the source of all the disturbance, started out on three legs and maintained such a lead that only one or two long-range and ineffective shots were obtained. After a pursuit of four or five miles, two stray dogs took up the trail and when night came the deer was lost.

In an endeavor to make certain of the cause of this rather discouraging example of marksmanship, the writer proceeded to target a few of these deer-slaying ball loads at a range of 60 yards. It was found that a 4-foot square was necessary to enclose ten shots at this range. A stray group of two or three shots would stay on a target half this size, but they could not be depended upon. With such decided inaccuracy in mind, experiments were carried on with ball loads with an idea of improving matters. Since the writer's shotguns are all choked to one degree or another, and since the chokes vary in the amount of their constriction, it was decided to give up the idea of using a special ball load. A load which shot fairly well in one gun might prove dangerous in another with a closer choke.

Much experimenting resulted in the adoption of a conical projectile weighing about 300 grains (in 20 bore) and having a total length of  $\frac{5}{8}$ ". The best diameter was found to be .590", as this fitted the bore closely, giving a bearing on all sides of the slug, and yet the bullet did not fit so tightly that it could not be pushed through with a little pressure. Before deciding on this diameter a great many slugs were cast in an old 20-gauge barrel, and were sized and shaped until they appeared about right. The next job was to make up enough of them by hand to make a group with them at 50 yards. Considerable time was spent on the design with the idea of having enough weight in the forward part of the slug to eliminate keyholing.

After shaping up about a dozen crude samples, these were loaded ahead of progressive powder charges in place of the shot, in factory loads. On being targeted at 50 yards they made groups but little better than ball loads, and the powder was changed to one of the bulk type, as the progressive powder was found to be too slow to burn well with the lighter weight ahead of it. The bulk powder loads were a decided improvement, and the groups remained consistently at about the same height on the target. Experi-

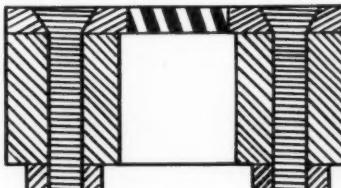
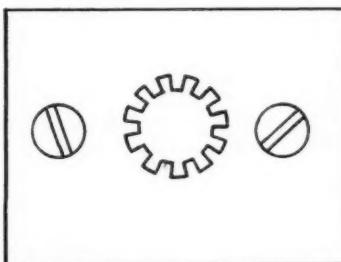
With the appearance of a fired rifle bullet in mind, and knowing, of course, the action of a rifled barrel on a bullet, rifling cuts were made on the plain slugs with a file. The keyholing immediately vanished. Groups were obtained which were well within 2 feet at 50 yards. With keyholing eliminated and fair accuracy obtained, a mould was made up to cast these slugs in a weight of 300 grains when using pure lead. It was intended to have the mould cast the rifling on the slugs, but the mould manufacturer decided that while it could be done, it would be a very expensive job. Another manufacturer would not even consider it, saying the rifling would prevent the slug from being dropped from the mould. It was finally decided to have a mould made up for the plain slug, and trust to luck and a little brains to develop a method of cutting the rifling after the slug was cast. These plain slugs, as cast, gave even better accuracy than the hand-cut slugs with the filed rifling, although they keyholed occasionally. The mould cast a perfect and uniformly balanced slug.

After considerable experimenting it was found possible to rifle these slugs in a steel die. The first one was made out of a  $\frac{1}{8}$ " piece of strap iron, drilled through with a  $\frac{1}{2}$ " drill. This piece of iron was then put in a lathe and the drilled hole bored out to a diameter of .550". This left a sharp cutting edge for the rifling cutters, which I managed to cut with a small sharp file. The piece was then ground smooth, hardened, and bolted to a 2" block of  $\frac{3}{4}$ " steel, which was then drilled out to allow the slug to pass through the die. Not having a suitable press on hand, I pushed the slugs through the die with a bench vise, and found that they came out sized to .593" and with clean-cut rifling grooves and lands, the grooves cut to a depth of .020".

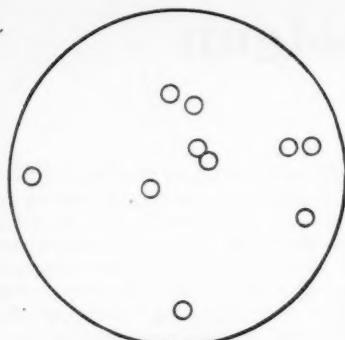
As these slugs are cast with a deep cavity in the base, to keep the weight down, it was found necessary to fill this cavity with some substance which was firm enough to keep felt wads from being blown in, and yet add very little weight. It was also necessary that this substance be easily and quickly applied. The answer was paraffine, which added but 8 grains to the weight of the slug and has sufficient hardness when cooled to keep the top wad from trailing the slug, with resulting inaccuracy. Since the rifling operation removes approximately 8 grains of lead, the slug returns to its original weight of 300 grains.



SIDE VIEW AND CROSS-SECTION  
OF 20-GAUGE RIFLED SLUG



TOP VIEW AND CROSS-SECTION OF  
20-GAUGE RIFLING DIE



**REPRODUCTION, REDUCED SIZE, OF 10-SHOT TARGET AT 50 YARDS USING 285-GRAIN RIFLED SLUGS. THE ACTUAL GROUP MEASURES 10½" FROM OUTSIDE TO OUTSIDE OF HOLES FARthest APART**

In order to speed up the slug-making job, a fixture is now used to hold the rifling die firmly in place under a large-size drill press. A steel rod, finished on the end to fit the inside of the slug, is put into the press in place of the usual drill. A quick stroke on the lever, and the slug drops out of the die nicely rifled and sized. In checking the time on this operation it was found possible to rifle about 300 slugs per hour. Casting the same number takes about an hour and a half, while they can be filled with paraffine in less than one-half hour, including smoothing off the bases. Loading the cases in the Ideal loading machine, and crimping, would consume about three hours more, and as a result one evening's work will turn out all the slugs I have any use for.

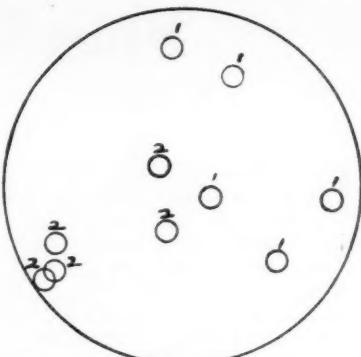
Further experimenting with these slugs developed the fact that weights can be lowered by 25 grains by using bullet metal picked up on our pistol range. Slugs cast with this alloy (mostly made up of .22-caliber bullets) take the rifling fully as well as the pure lead, and can be turned out with less care and effort. Pure lead slugs will mushroom out like a soft-nose rifle bullet, and expand to about  $\frac{3}{4}$ " in

soft wood. A slug of pure lead weighing 300 grains (original weight) was taken from a 9-point, 180-pound buck this winter, and had expanded to a diameter of  $\frac{7}{8}$ ". This slug struck the buck as he was going away, passed through the neck, through the head from the rear, and was found in one piece back of the teeth in the lower jaw. This slug weighed just 270 grains when removed from the head. Slugs made of bullet metal expand well in wood, and in full charges have a penetration of about 5 inches in birch. Pure lead slugs have a penetration of about 4 inches. Experimental slugs made from chilled shot were found too hard to mushroom much; and, being brittle, would break up on impact. It is rather interesting to note the knockdown smash these small 20-gauge slugs have at ranges up to 100 yards.

Groups made with these slug loads at 50 yards are very satisfactory when it is considered that they are shot from smoothbore guns. The best group I have obtained to date is a 5-shot group of 5 inches. The best 10-shot group measures 10½ inches from outside to extreme holes. Both of these groups were made at 50 yards in a ribbed Winchester with two Lyman sights. These slugs work well in modified barrels, due to the fact that they expand quite a bit when fired. All slugs I have picked up, even those of the harder alloys, have expanded in diameter quite a bit. The pressures are low with these loads, due to the comparatively light weight of the slug. They can, however, be speeded up (with some loss of accuracy) so that they are true hi-speed loads. With these, the slap of the slug on the target (50 yards) blends with the report of the gun. Solid balls in 20-gauge weigh from 240 to 250 grains. The additional 50 grains weight of the rifled slugs means a much harder blow; and, due to the mushrooming feature, they make a more deadly load.

The 12-gauge slugs are next in line, and I have had a mould made up for this size.

Since the above was written I have had quite a bit of correspondence with



**REPRODUCTION, REDUCED SIZE, OF TWO-MAN 10-SHOT GROUP AT 50 YARDS USING 440-GRAIN 12-GAUGE SLUG. THE FIGURES INDICATE THE SHOTS FIRED BY EACH MAN**

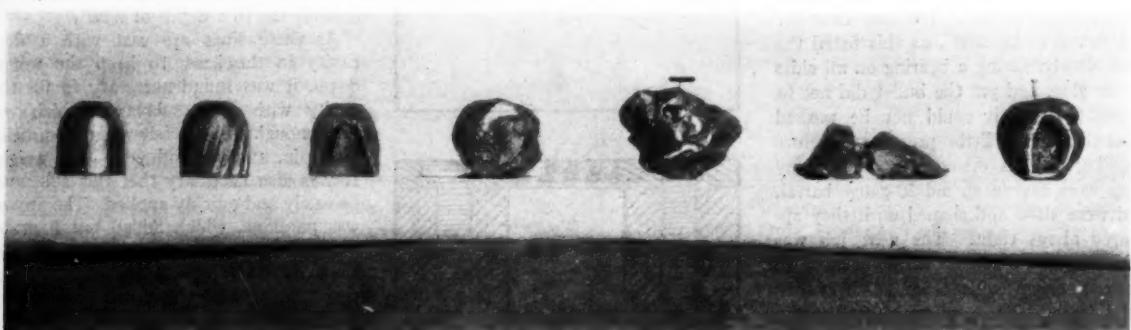
Mr. Wallace Coxe, of the Burnside Laboratory, and he very kindly put some of the 20-gauge slugs through a pressure and velocity test, with results as follows:

**TESTS IN 20-GAUGE UNIVERSAL DU PONT RECEIVER NO. U354**

Hollow-base rifled projectiles weighing 285.4 grains; base filled with paraffine; tests made with standard blend 105 of du Pont smokeless shotgun powder in Climax shells.

Weight of Charge	Velocity at 25 feet Mean	Pressure Lbs. per Sq. in.
25.0	1,342	10,000
	1,325	10,100
	1,351	11,100
	1,302	8,700
	1,312	9,400
	1,327	9,800
27.0	1,351	8,000
	1,331	9,500
	1,338	8,500
	1,364	9,100
	1,355	8,600
	1,352	8,700

Commenting upon the results of the tests, Mr. Coxe says: "You will note that the higher weight of charge developed a lower mean pressure. This seemed to be a more satisfactory charge in that the variations were reduced considerably, and that probably explains why the powder burned more efficiently."



**LEFT TO RIGHT: 20-GAUGE SLUG AS CAST; SLUG AFTER RIFLING; SLUG SHOWN IN SECTION; FRONT END OF SLUG CAST FROM CHILLED SHOT AFTER BEING SHOT INTO WOOD; SLUG TAKEN FROM BUCK; SLUG CAST FROM HARD ALLOY AFTER STRIKING FROZEN GROUND; REAR VIEW OF SLUG AFTER PENETRATING 5 INCHES OF HARD WOOD**

I spoke of having a 12-gauge mould made up, and Mr. Coxe is at present making a test of these 12-gauge slugs for pressure and velocity. In rather brief target tests I made at 50, 100, and 300 yards, these 12-gauge slugs seem to be even better than the 20-gauge ones. I rather hesitate to tell what results we obtained, but will say that at 100 yards the group can be held in a 20" circle. Two shooters using the same gun and making 5-shot groups each, 50 yards, on the same target, turned in a 10-shot group of 11". This 10-shot group had two distinct groups, due to different eyes and holding. I am enclosing copy of this group, having marked holes 1 for the first man and 2 for the second. On a test at 300 yards, to use up the balance of the loads on hand, we found it possible to keep 3 out of 5 shots on about a 4 x 5-foot target when there was no wind blowing. Using single ball loads in comparison, we had difficulty in hitting the corner of the lot on which the target was placed.

#### "A HUNTER TALKS"

By Wilfrid Robertson; 208 pages; 10 illustrations; 4 $\frac{3}{4}$  x 7 $\frac{1}{4}$ ; cloth binding. Published by Arthur H. Stockwell, Ltd., London. Obtainable through N. R. A. Service Co., \$3.00.

THE experiences of twenty years as an African pioneer and rancher on the ragged frontiers of civilization, are the qualifications of Wilfrid Robertson as a writer on African hunting. Born with the irresistible urge of the Wanderlust, and a longing for the remote and unspoiled places of the earth, Mr. Robertson broke family ties at an early age, to go to Africa. In a recent letter he says, "From a boy I was always keen on shooting and firearms generally, and the lure of the wild has always been strong in me. At the age of nineteen I left England and went out to Rhodesia; then a far less known, and much wilder, part of Africa than it is today. In Rhodesia I acquired from the government of the country the rights to develop a certain block of land on the extreme edge of civilization, and here, as I developed the place, I grew cattle, tobacco, maize, and cotton. My own land, and much of the surrounding country for hundreds of miles was a paradise of big game, and whenever I could spare the time I struck out, accompanied by a few native carriers, on hunting expeditions. These combined hunting and exploring trips extended farther and farther afield, and I was able from time to time to fill up some of the many blank spaces on the inaccurate maps that were then in existence. During these weeks and months of hunting I encountered

every kind of African game, from elephant downwards. . . . On most of these hunts, often hundreds of miles from the nearest white man, I was alone save for natives; though at times I was accompanied by a friend."

Mr. Robertson's articles on African hunting have appeared in our columns from time to time and have caused very favorable comment. Recently he published a book, "A Hunter Talks," which, though smaller than average in bulk, is packed full of information concerning African hunting and camping. This book is different from other recent books of the kind that we have seen. In the first place, Mr. Robertson knows Africa, and his writing is based upon his years of experience there, entirely on his own, rather than upon one or two hunting trips under the protection and guidance of a professional hunter with elaborate equipment. And then, Mr. Robertson possesses that rare gift of the English, a literary style so simple and easy, and yet so to the point, that the reader absorbs new knowledge and ideas with so little effort that he scarce realizes he is learning. Furthermore, this author does not write for his readers—he chats with them; and he discusses things so clearly that you forget yourself as you read, and imagine you are sharing with the author the experiences of which he writes.

This is what might truly be called a "friendly little book." Friendly, because, due to its simple, easy style, you tend to turn to it in odd moments, or when tired; yet you feel that your time is well repaid. And then the book is easy to hold, being smaller than average size and printed on a paper which, though substantial, is light in weight. The type is good and the surface of the paper is easy on the eyes. The blue cloth binding is firm but not heavy.

Mr. Robertson has arranged his book in chapters, each having to do with some particular species of animal or animals. He describes the beasts, their habits, peculiarities, the type of country in which they are found, etc.; and interwoven with it all are accounts of his experiences in hunting them. There are also separate chapters on Rifles, Camp Lore, and Natives, which are very interesting.

Needless to say, everyone in any way interested in African hunting will wish to read Mr. Robertson's book. Also, everyone interested in any form of hunting will wish to read it, because the spirit back of all forms of hunting is the same, and African hunting is the greatest of them all. And then, in following Mr. Robertson in his wanderings, some hints on camping methods and woodcraft may be picked up which will prove useful on the shorter trips to which most of us must confine ourselves; while some knowledge of how

rifles perform in Africa should lend a keener zest and thrill to our own hunting, be that in quest of the brown bear of Alaska or the woodchuck in the summer garden patch.

We hope that the present volume is just the beginning, and that Mr. Robertson will be moved to write more about his experiences on the game trails of Africa.

LAURENCE J. HATHAWAY.

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#### STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

of THE AMERICAN RIFLEMAN, published monthly at Washington, D. C., for April first, 1932.

City of Washington, District of Columbia, ss: Before me, a notary public in and for the State and county aforesaid, personally appeared Laurence J. Hathaway, who, having been duly sworn according to law, deposes and says that he is the Editor of THE AMERICAN RIFLEMAN, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Name of Publisher, National Rifle Association of America. Post office address: 816 Barr Building, Washington, D. C.

Name of Editor, Laurence J. Hathaway. Post office address: 816 Barr Building, Washington, D. C. Name of Managing Editor, C. B. Lister. Post office address: 822 Barr Building, Washington, D. C.

Name of Business Managers, Executive Committee, National Rifle Association of America.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

National Rifle Association of America. No stockholders. Brigadier General M. A. Reckord, Executive Vice-President, National Rifle Association. Mr. C. B. Lister, Secretary-Treasurer, National Rifle Association. Mr. Laurence J. Hathaway, Editor, THE AMERICAN RIFLEMAN.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders, and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and that this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is —. (This information is required from daily publications only.)

LAURENCE J. HATHAWAY, Editor.  
Sworn and subscribed before me this eleventh day of April, 1932.  
(Seal.) HELEN A. LOSANO,  
*Notary Public.*

(My commission expires Sept. 10, 1933.)

## AUSTRIAN GUN CRAFT

(Continued from page 21)

and artistic decoration, Austria reigns supreme.

In order to illustrate this contention, the pictures of a few arms may serve. All of the pictures of rifles represent arms made to special order as regards caliber, dimensions, and finish. For rifles and shot-guns, very little "drop" is my specification key word; for pistols I invariably prefer the "Oriental" form of grip, meaning an obtuse angle between barrel and stock. The decorations in most instances are in the form of oak leaves and some French or English style of scroll engraving, but there are very few game scenes. The latter are beautiful, but the true relief work is so very expensive when performed by a real artist that so far I refrained from making myself a present of a rifle decorated in this manner.

My favorite arm is shown by Figure 1. It is an over-and-under double rifle for the 6.6/70-mm. cartridge, with about 2,100 f. s. velocity and some 1,500 f. p. energy. It is good enough for deer, but is principally intended for the chamois (Alpine mountain goat), and has barrels of about 22 inches. The two barrels are octagon in shape, and of Antinit steel. The matted rib, connecting piece, and locking teeth are milled out of one piece of steel. Not being a friend of hammerless arms, I had the rifle equipped with two rebounding hammer locks of watchlike precision. The stock, which reaches to the muzzle, is of imitable Styrian walnut, embellished with stag-horn ornaments. The rifle is superbly accurate.

Figure 2 shows a single-shot falling-block rifle with Antinit steel barrel, equipped with a  $\frac{1}{2}$ -inch matted rib. The action is of English tool steel, demountable without the aid of tools, every part polished and checkered, the outside decorated with oak leaves and gold-inlaid acorns. It is a take-down, and shoots the 8.2-mm. Manlicher cartridge, which is unequalled for penetration. As regards accuracy, it equals the over-and-under just described.

The next cut, Figure 3, is of a four-barrel combination gun which Mr. Rosenberg, in his article appearing in the December, 1931, issue, called a "monstrosity." Two shotgun barrels on top, two rifle barrels underneath, the latter performing remarkably well at a distance of 50 yards. The gun is intended for small game only, taking the .410 shot and Austrian Hornet rifle cartridges.

The next in line, Figures 4 and 5, represents a concession to modern times by a sportsman who believes that high-powered bolt-action rifles belong to the soldiers, and that their use on game is not good

sportsmanship. The rifle shown is the well-known Manlicher-Schoenauer, the only bolt-action gun, except the Model 88 straight-pull Manlicher, which is not monstrous in appearance. The barrel is of Antinit steel, with a  $\frac{1}{2}$ -inch matted rib. The bolt handle is fluted, with knob in the form of an acorn, action richly hand engraved and gold inlaid. The rifle shoots the normal M.-S. 6 $\frac{1}{2}$ -mm. cartridge, and is equipped with a Bailie-Grohman adjustable peep sight.

A fine target pistol (Figure 6) for the Austrian Hornet cartridge concludes the show. It is a little gem in appearance, shape and performance, has an octagon Antinit steel barrel with matted top, the action is of the falling-block type, actuated by a concealed lever. A protected precision bead and micrometer notch sight permit of accurate aiming. The arm is richly engraved and gold inlaid, and demountable by hand, without tools.

Most all of the rifle and gun fiends, like myself, who do not consider their arm just a murder tool, uninteresting in itself like a plumber's monkey wrench, all familiar with the German and English sporting weapons; therefore I refrain from sending pictures of those that I own. Everybody can easily make comparisons as regards form and general appearance, but only those who own high-grade Austrian arms will realize the full extent of their excellence.

Apart from firearms, Austria harbors several real artists in the line of knife-making. The greatest of them all, Professor Bluemelhuber, can be called the only remaining authority on steel carving. The knife called the "Furstenberg hunting knife" (carved handle shown in Figure 7) is made of one piece of rustless "precious" steel. What this means can only be realized by examining the illustration, and in particular the hollow handle. Before releasing the weapon, the maker "tested" it. With one blow of a heavy mallet he drove the point through a sheet of steel  $\frac{1}{8}$  of an inch thick, without damaging the point. From the master's own statement I understand that several months are required to produce such a knife. In consequence the price of about \$700 is not unreasonable.

Knives and other edge weapons of distinction and excellence are also produced by Johann Springer's Erben, in Vienna.

A peculiar custom of the old-time European gentleman must be mentioned in order that the shapes of the hunting knives, or rather short hunting swords, may be understood. It is not gentleman-like to carry tools. An ax or hatchet is considered a tool, and in consequence no gentleman will carry one. Therefore, the heavy hunting knife, or Atandhauer (Figure 8) must perform the duty of the small ax. The narrow-bladed "stag catchers" (handle shown in Figure 9) are used to give the *coup de grace* to a wounded stag or deer, because a gentleman should not shoot any game that has been brought down by a shot.

## THE BERNS-MARTIN HOLSTER

(Continued from page 26)

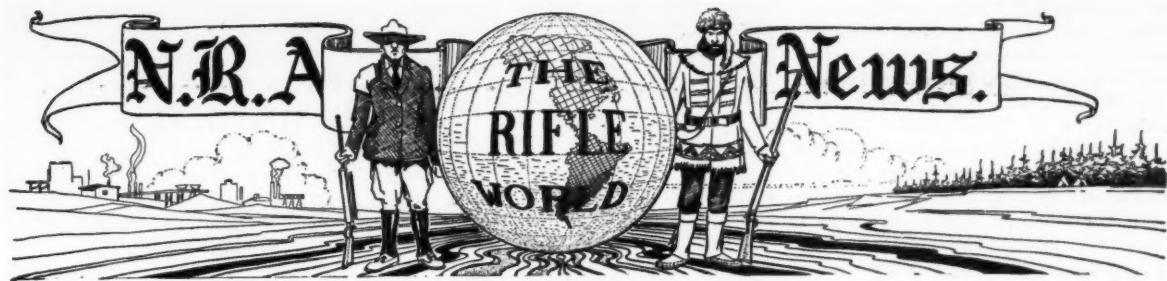
officer's use, as he may lose his footing when running, or be knocked off his feet or rolled over in a scrimmage. Nearly all other belt quick-draw holsters will allow the gun to fall out in such circumstances, unless it is fitted very tight and a leg strap used.

This holster can be fastened to the front of the car seat near the leg, or on the dash or the steering wheel of the car, for quick use. A banker or storekeeper can fasten it just under the counter in any position, and know that he can get his gun instantly if necessary. Such an arrangement is very much better than having the gun in a drawer, or on a shelf where it may be knocked off, and where it is out of reach.

I can see more possibilities and advantages in this holster than in any other I have ever used. It protects the gun perfectly, yet the gun is always accessible. This is the lightest belt and holster combination I have ever seen to be made of such thoroughly strong and durable materials. The inside of the spring is carefully lined with leather, which prevents it from wearing the bluing off the gun. One must see and use this outfit to really appreciate its worth.

Berns and Martin have decided not to patent this holster, but anyone wishing to have such an outfit made up for him can write J. E. Berns, 1903 Sixth St., Bremer-ton, Wash. All outfits made up will have a safety strap as in the illustration, with a strong, durable glove fastener, for use when the gun will not be needed instantly, or when riding. Once unsnapped, this safety strap does not in any way interfere with a quick draw. I take my hat off to Berns and Martin for having produced the fastest, lightest, and most practical belt holster in existence.





Conducted by C. B. Baker

## Training Program Boost to Club's Progress

**D**EVELOPING pistol marksmen of real ability and keeping the community keenly alive to the merits of shooting as a sport and as an important measure of defense against crime is a work that is being accomplished with commendable success by the Watsonville (Calif.) Pistol and Revolver Club. The club provides every possible incentive and encouragement for its members to compete in its year-round program of trophy matches and to persist in acquiring a superior skill in shooting.

The club has rounded out a nicely balanced training program of matches which, starting in January and continuing to November with a three-month interim during the summer, carries the shooter by easy degrees from the not-so-difficult courses on up to the most exacting courses of pistol shooting. It is of note that some

members, unacquainted with the game before affiliating with the club, have attained expert proficiency after shooting through the training program but once. In all these matches, trophies are the chief rewards to the winners. Then there are special courses in which trophies are awarded for one month's possession instead of a year's keeping.

The club was organized in December, 1930. Since that time it has progressed rapidly and is recognized as a worth-while asset to the community. It has accumulated a quite sizeable collection of handsome trophies for competition among its members and has evolved a thoroughly systematic plan for the conduct of its affairs tending toward growth, maintenance of interest and safe shooting. The officers have left nothing undone to keep the club

and marksmanship interest on top in the community.

Besides those provided by the club itself, trophies have been contributed by Mayor C. H. Baker, the Watsonville Chamber of Commerce, the McFarlane Company, the P. J. Freiermuth Company, the Watsonville Clearing House, the Johnson Drug Company, the Edward H. Lorsen Post of the American Legion, and the Peterson Planing Mill.

Use of the building in which the indoor range is installed was donated by George Clough and use of the ground for the outdoor range was donated by Stephen Scurich. Ground for an entrance to the outdoor range was provided by Mr. Manning. From the time it was started, the club has had the unqualified support of the Chamber of Commerce and F. W. Atkinson, editor of the *Daily Pajaronian* and the *Watsonville Register*. Mr. Wilson, of the *Pajaronian* staff, has given valuable advice and assistance.

Represented in the membership of the club are the local posts of the American Legion and Veterans of Foreign Wars, the Pajaro Valley Bank and the local branch of the Bank of America and law-enforcement agencies, including members of the police department, Constables Mozingo and Cano and their deputies, Jules Vissine of the California Fish and Game Commission, and brother officers.

At the present time the club is vigorously and actively fighting a proposal that the firearms laws of the state be so amended as to make invalid gun-carrying permits in any county excepting the one in which issued. One of the principal aims of the club, as provided in the by-laws, is "to watch carefully all antifirearms legislation and exert our influence to see that, in the process of disarming the criminal, sensible laws are passed which will not interfere with the right of the honest American citizen to bear arms and protect his home."

The officers of the club also place emphasis on the fact that knowledge on the part of criminals that the merchants, bankers, police and other citizens are pro-



ARRAY OF HANDSOME TROPHY CUPS FOR WHICH MEMBERS OF THE WATSONVILLE CLUB COMPETE THE YEAR ROUND. TWO GIRLS OF THE COMMUNITY ARE SHOWN DISPLAYING THEM

ficient in the use of firearms tends to decrease crime; that the majority of criminals are cowards and hesitate to operate against protected institutions or individuals of known ability in the use of firearms.

The indoor and outdoor ranges of the club are rated as having no superior in the Watsonville section of the state and the indoor range as second to none in the state. The courses of the club's training program are arranged in a manner to develop the skill and ability of the members in an orderly and logical manner, starting with slow fire at short ranges and advancing to rapid fire at the longer ranges.

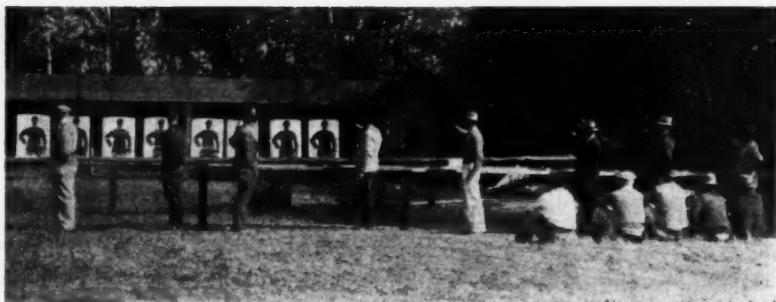
The schedule of trophy matches in the training program starts in January. In the principal matches, trophies are awarded for possession for one year and five of the matches constitute a grand aggregate for special trophies. In most of the matches, trophies are awarded for both .22-caliber and .38-caliber shooting. In addition, special monthly matches are fired for trophies which are held by the winners only for a month. Rules have been worked out making it impossible for a competitor to hold more than three trophies during a year.

The summer months of June, July and August are held open for practice, for team contests with other clubs and organizations and for special matches, including the N. R. A. outdoor events. The annual meeting of the club for election of officers and award of trophies and medals is held in November. December is held open for contests with other clubs, turkey shoots, participation in the N. R. A. matches, etc.

All in all, the club's year-round program is a most attractive one and most intelligently arranged, furnishing almost irresistible incentive for the members of the club to do plenty of shooting. Despite that the club is less than two years old, it has developed many pistol and revolver marksmen of outstanding ability and has brought shooting to the fore of sports in its community.

#### AN INTERNATIONAL MATCH

THE Norfolk and Western Railway Y. M. C. A., Portsmouth, Ohio, has completed arrangements for a rifle postal match against a police team of Hamburg, Germany. The railwaymen will fire their scores on June 25 and the Hamburg police on the following day. The match will be fired at 50 yards and 50 meters, 20 shots at each range per shooter, prone, metallic sights. Teams of ten men will compete, high five to count. The Portsmouth shooters are also endeavoring to arrange similar matches with teams of other countries.



WATSONVILLE SHOOTERS AT OUTDOOR PRACTICE

## Indiana's Annual Indoor Matches

THE indoor rifle and pistol matches of the Indiana National Guard and the Indiana State Rifle Association, held April 2 at Culver Military Academy, reestablished several facts: interest and expertise in marksmanship are being maintained and increased in the Hoosier State; Culver is the logical place to hold this meet, and Basil Middleton, Lt. Col., I. N. G., is an executive officer par excellence in the staging of such a shoot.

A record registration of 237, nearly 36 per cent more than in any past year, was on the books before shooting began at 8 a.m. The registrants came from villes and burghs and cities, and not a few of the addresses included rural routes. In fact, forty communities were well represented.

That Culver should be selected, year after year, as the place for holding these matches is readily understood and generally applauded by those in attendance. What Lake Maxinkuckee may lack in the way of geographical location within the state is agreeably compensated for by the Academy's ideal material and personnel. The gallery in the basement of the recreation building is equipped with thirty-seven 50-foot rifle targets, four 25-yard pistol targets, and four 50-foot .22-caliber pistol targets. The whole set-up is designed and arranged to facilitate the large-scale operations that characterize such a state shoot. The adjoining gymnasium provides the necessary barrack facilities for shooters and also lends itself to the orderly conduct of such essential clerical matters as registration, billeting, purchase of targets, marking of targets, and progressive posting of scores. At night it was a quiet dormitory, with army cots stretched row on row. Nearly 150 shooters reported the afternoon and evening before the shoot and availed themselves of the hospitality offered by the Academy.

This physical set-up at Culver was supported by an assuring personnel. There

was on duty during the matches a reception committee composed of cadets whose duty it was to see that the shooters were made comfortable in, and familiar with, their surroundings. Cadets also helped to expedite the work of the registration, billeting, range and statistical officers. In general charge of the organization and conduct of the matches was Lt. Col. Middleton and his chief assistant, Capt. Homer A. Obenauf, Ord. Res. These men know shooting and shooters and from long experience are quite ready to cope with any situation that might arise.

As is customary in this meet, five matches were fired in each division, rifle and pistol. The rifle matches included limited re-entry prone, limited re-entry offhand, individual championship prone, individual championship offhand, and team match prone and standing. The pistol division included limited .22-caliber re-entry, individual championship .22-caliber, limited .45-caliber, re-entry, individual championship .45-caliber, and pistol team .22-caliber. All rifle matches were fired on 50-foot N. R. A. targets; the .22-caliber pistol matches on Standard American 50-foot targets, and the .45-caliber pistol matches on 25-yard "L" targets. Merchandise prizes were awarded to first, second and third place winners in re-entry matches, while similar winners in the other matches received attractive gold, silver and bronze medals, respectively. Glass sights were not permitted in the rifle team match.

In general, the rifle shooting was superior to what it was a year ago. This was most noticeable in the individual championship and team matches. William H. Snell, Lafayette, won the prone championship with a possible 200 and 65 extra bulls; Judge James A. Emmert, Shelbyville, was second with 26 extras; and Virgil A. Liggett, Fort Wayne, was third with 25 bulls over the possible. A year ago

## HONOR ROLL—100 PER CENT N. R. A. CLUBS

### NEW CLUBS ADDED TO HONOR ROLL DURING THE PAST MONTH.

(All club members are individual members of the N. R. A.)

FIRST DIVISION CANTIGNY POST,  
No. 556, AMERICAN LEGION  
RIFLE CLUB,  
Thomas Farmer, *Secretary*,  
5509 Quincy Street,  
Chicago, Ill.

ALAMEDA POLICE REVOLVER CLUB,  
John W. Strohm, *Secretary*,  
2247 Central Avenue,  
Alameda, Calif.

WEWOKA REVOLVER AND RIFLE  
CLUB,  
Gene Byrd, *Secretary*,  
Wewoka, Okla.

JAYHAWK RIFLE AND PISTOL CLUB,  
Frank J. Coogan, *Secretary*,  
701 Ohio Street,  
Lawrence, Kans.

BERLIN RIFLE AND PISTOL CLUB,  
W. L. Harrison, *Secretary*,  
1004 Wisconsin Street,  
Berlin, Wis.

UPTOWN CHICAGO RIFLE CLUB,  
Louis Schuppner, *Secretary-Treasurer*,  
1301 Argyle Street,  
Chicago, Ill.

ANCHORAGE RIFLE CLUB,  
Mrs. Charles W. Monk, *Secretary-Treasurer*,  
Anchorage, Alaska.

this match was won with 200 plus 41. Maurice J. Cook, Arcola, was first in the offhand championship match with a high 184; Dr. Peter H. Makielski, Mishawaka, was second with 182; and Walter C. Rose took third with 180. The winning score a year ago was 183.

Fifteen civilian clubs and 14 service organizations competed in the rifle team matches. Very superior offhand shooting by Robert Cissell, Indianapolis, won the rifle team match, civilian division, for the Hoosier Rifle Club No. 2. This lad boosted his team's total to 922 when he shot a 93 in the standing stage. Culver Military Academy No. 1 was second with 910, and American Legion Victory Post No. 70, Shelbyville, took third with 907. A year ago the winning rifle team shot 918.

Considerable improvement was noted in the shooting in the National Guard Division of the rifle team match. The Military Trophy awarded to the winner in this division went to Company L, 152d Inf., Warsaw, largely because of the performance of Captain Milo D. Snyder, who shot

PARK RIDGE RIFLE AND PISTOL  
CLUB,  
Herman F. Hahn, *Secretary*,  
1000 West Center Street,  
Park Ridge, Ill.

NORTHERN WESTCHESTER RIFLE  
AND PISTOL CLUB,  
Johannes E. Howay, *Secretary*,  
Box 124,  
Katonah, N. Y.

CALISTOGA RIFLE CLUB,  
F. E. Williams, *Secretary*,  
Calistoga, Calif.

LONG BEACH PISTOL CLUB,  
Franklin Frymier, *Secretary-Treasurer*,  
253 Bennett Avenue,  
Long Beach, Calif.

ROCHELLE RIFLE AND PISTOL CLUB,  
INC.,  
John W. Nelson, *Secretary*,  
Rochelle, Ill.

LANCASTER LEGION RIFLE AND PISTOL CLUB,  
D. M. Fair, *Secretary*,  
170 Marks Avenue,  
Lancaster, Ohio.

188. Company L's total was 887. Company G, 152d Inf., No. 1, Newcastle, was second with 867; and Company G, 152d Inf., No. 2, Newcastle, was third with 791. A year ago 871 was good enough to win. The National Guard shooters perhaps were inspired by the presence of their Adjutant General, Paul E. Tombaugh.

O. E. Crockett, Logansport; E. Menefee, Rising Sun, and L. J. Manlief, Indianapolis, were first, second and third, respectively, in the prone re-entry match—the winner shooting a possible plus 79. Maurice J. Cook, Arcola, won the offhand re-entry, with Estel Huffaker, Marion, second, and Dr. Peter H. Makielski, Mishawaka, third. The high scores in this match were 94, 93 and 92.

Competition was close in the pistol matches, though the performances were not quite up to those of a year ago. Judge James A. Emmert, Shelbyville, proved himself an expert with the pistol as well as the rifle by winning the .22-caliber championship with a 93. Close behind were William R. Mitchell, Indianapolis,

and Ralph W. Noland, Fort Wayne, with 92 and 91, respectively. Bernard Sekardi, of the 11th Infantry Band, Fort Harrison, became the .45-caliber state champion by shooting a 99—1 point more than was scored by Cadet John A. Ross, captain of the Culver pistol team, and Howard A. Harvey, Fort Harrison, and George W. Mowrey, Warsaw. In the .45-caliber re-entry match, C. C. Lafler, Fort Harrison, shot a possible plus 99, and Ralph W. Noland, Fort Wayne, won the .22-caliber re-entry with a 92. The same Noland was largely responsible for winning the pistol team match for the Fort Wayne Rifle and Revolver Club when he shot an 87 to boost his team's aggregate to 409. The Gary Railway Rifle Club shot 404 for second place and Culver Military Academy was third with 400. Eight 5-man teams competed in the pistol team match.

The individual state gallery championship, which is determined by totaling the scores made in three individual championship matches (rifle prone, rifle offhand and pistol .22-caliber) was won by Edward V. Menefee, Rising Sun, with an aggregate of 451, scored as follows: individual championship rifle prone, 196; individual championship rifle offhand, 169; individual championship pistol .22-caliber, 86. Menefee's aggregate of 451 was tied by three others, Ray L. Reichenbach, Fort Wayne; Harry M. Turpin, Newcastle, and Milo D. Snyder, Cromwell. The winner was decided by picking the one with the highest pistol score, and Menefee's 86 topped the pistol scores of the four men.—W. E. LELAND, Culver, Ind.

### DEMOLAY KANSAS CITY CHAMPS

THE Kansas City (Mo.) championship was won by the DeMolay team with nine matches won and one lost in the inter-city league which closed April 8. The league standing:

	<i>W</i>	<i>L</i>	<i>Pct.</i>
DeMolay	9	1	.900
V. F. W.	8	2	.800
M. B. A. No. 2	5	5	.500
M. B. A. No. 1	3	7	.300
Company A, 110th Engineers	3	7	.300
Company B, 110th Engineers	2	8	.200

### ERIE PAPER TO SPONSOR SHOOT

The first rifle tournament ever staged in the Erie (Pa.) district will be held at the Walnut Creek range, about eight miles from the city, on July 10, sponsored by the *Erie Dispatch-Herald*. Riflemen of Erie County, headed by Roy A. Loder, are cooperating. The entry list will be open to all riflemen.

The Walnut Creek range has 20 targets at 50 yards and 20 at 100 yards, so there will be no delay in running off the events. Anyone desiring more complete information should communicate with Roy A. Loder, 1014 Cherry Street, Erie, Pa.

## NORTHWESTERN OHIO LEAGUE

THE fifth consecutive gallery season of the Northwestern Ohio Rifle League was completed April 17 with the annual tournament held on the range of the Findlay Rifle Club, which had won the league championship by taking 10 out of 12 matches fired with six other teams over a three-month period.

The league matches were fired shoulder-to-shoulder, five shots in each of the four positions, five high scores counting. The league standing:

	<i>W</i>	<i>L</i>	<i>Pts.</i>
Findlay	10	2	11,379
Lima	9	3	11,335
Toledo	9	3	11,245
Bowling Green	8	4	11,241
Bluffton	4	8	11,099
Fostoria	2	10	10,654
Kenton	0	12	10,552

The ten high individuals and their averages: Art Burtscher, Toledo, 190.16; K. Troutner, Findlay, 190.16; F. H. Holman, Lima, 189.66; C. A. Dority, Toledo, 189.36; H. F. Stemen, Lima, 189.33; R. Gilbert, Findlay, 189.33; F. J. Traucht, Findlay, 189.25; I. Sonderman, Lima, 188.30; K. A. Swigert, Bowling Green, 188.30; N. L. Martin, Lima, 188.30.

### Tournament Results

Grand Aggregate (10 shots each of 4 positions, telescopic sights; 10 shots prone and standing, iron sights): Ivo Sonderman, Lima, 570; F. J. Traucht, Findlay, 568; F. H. Holman, Lima, 568.

Aggregate (10 shots each of 4 positions, telescopic sights): Art Burtscher, Toledo, 387; Ivo Sonderman, Lima, 384; K. Troutner, Findlay, 383.

Two-man Team Match (5 shots in each of 4 positions, telescopic sights): Ivo Sonderman, 194, and N. L. Martin, 191, both of Lima, for total of 385; Edson Klinkel, 194, and Art Burtscher, 186, both of Toledo, for total of 380.

Prone-standing, iron sights: Baldwin, Findlay, 193; Holman, Lima, 189; J. R. Moser, Toledo, 187.

Twenty shots offhand: J. R. Moser, 187; Art Burtscher, 181.

Position winners: Prone, 15 out of 41 entries scored 100, drawings held. Sitting, Ivo Sonderman and N. L. Martin, both of Lima, and Friddle, Findlay, 100 each. Kneeling, E. N. Littleton, Bowling Green; N. L. Martin, Lima, and R. A. Patterson, Bluffton, 98 each. Standing, Art Burtscher, 93; F. J. Traucht, 91; Edson Klinkel, 90.

R. G. PATTERSON.

### SAN JOAQUIN LEAGUE ENDS

THE San Joaquin Valley (Calif.) Rifle League has come to a close with the Alta District Rifle Club, of Dinuba, winning the handsome trophy, a cup 20 inches high with crossed rifles on one side. The club will have permanent possession of the cup but must place it in competition among its members once a year.

The total scores of the various teams for the three matches fired follow: Alta District, 3,391; Bakersfield, 3,386; Madera, 3,377; Fresno, 3,330; Coalinga, 3,304; Visalia, 3,254; Taft, 3,046.

The five high individuals: Craven, Alta District, 709; Jeffrey, Fresno, 707; W. P. Howland, Coalinga, 691; Cline, Madera, 687; T. R. Barnes Bakersfield, 686.

The clubs of the league, gratified by the success of the past season, are planning for a greater number of shoots and shooters next year.

## Guns vs. Bandits

POLICE of Portland, Oreg., checking over their records as spring brought to an end the annual major drives against crime, reported five bandits slain and several others wounded. The city's experience was that robbers are brave enough when their victims quietly submit, but their courage fails when the would-be victims produce weapons of their own and "fight it out." According to Detective Captain Harvey A. Thatcher, the records show that after each encounter in which a robber was fatally wounded other holdup men withdrew to their lairs for several days.

In Portsmouth, Ohio, City Manager F. E. Sheehan has appointed W. L. Compton, active in the "Y" pistol and revolver work, to the task of training the police officers in marksmanship and has also asked an inspection of and report on the arm carried by each officer and how it is kept. Two Portsmouth officers have been killed by thugs in the past four years but in the future the gunmen will be met with a draw as quick as their own and marksmanship which is likely to be superior. The city manager's move has won the support of the best citizens of the community.

Two bandits, their faces smeared with grease, were thwarted by J. C. Dubois, cashier of the bank, in an attempt to rob the Asheville (Ala.) Savings Bank. As the men parked their car in front of the institution and one alighted carrying a sawed-off shotgun, Mr. Dubois secured his pistol and opened fire. The men immediately retreated.

While Arthur Cash was putting his automobile in his garage in Uriachville, Ohio, on April 22, two men accosted him, one covering him with a revolver and the other hitting him over the head with a club. Mr. Cash, instead of submitting, drew his own revolver and fired, severely wounding one of the men. The second of the bandits was later captured.

Attempting to break into a department store in Piqua, Ohio, on April 27, a man was shot by Harry Foreman, night watchman at the store. A revolver and a blackjack were found on the man.

Two brothers were fatally wounded when they attempted to rob a grocery store in Evansville, Ind., on April 30. Entering the store, the bandits demanded the contents of the cash register. Charles Burton, the manager, answered their command by firing both barrels of a shotgun into one of the men and then mortally wounded the other with a pistol.

In an attempted holdup of a store operated by Charles Greenstein in Cleveland, Ohio, on April 16, a robber was shot and killed by the storeman.

In Niles, Ohio, on April 15, two youths entered a filling station operated by C. R. Freeman and told the owner to "reach for the skies." Freeman obeyed, but as the two bandits left the place he procured his revolver and opened fire, seriously wounding one of the men.

Five pistol shots fired by Ross McFarland, proprietor of a drug store in Portland, Oreg., on April 4, rid the city of a bandit who had been conducting a series of raids on drug stores. Mr. McFarland is described as "a veteran of many holdups but until this time always the loser." The bandit was armed and had his revolver cocked and ready to shoot.

After they had robbed the People's Bank in Bono, Ark., of \$3,300 on February 24, two bandits were felled by bullets fired by pursuing citizens and Officer Jim Coward who had been warned by Luther Barnes after he suspected a robbery when he saw the men enter the bank.

In Seattle, Wash., following an epidemic of holdups, merchants decided to take matters in their own

hands and not depend upon the police for protection of their cash. A report of March 15 states that "instances where merchants have 'shot it out' with gunmen in Seattle have been increasingly noticeable, in most cases the bandits being driven off, wounded or killed."

When one of two robbers pulled a revolver on him in an attempt to hold up his gas station near Lewisburg, Ohio, on March 10, Luther Bixler knocked the gun from his hand and quickly procured his own weapon and shot the man. The men fled in an automobile but were captured when the machine was wrecked.

Pursuing a bandit machine in Chicago on April 7, Policeman Bernard Bukowski fired while his wife loaded his gun for him, despite flying bullets from the fleeing robbers. Finally, the officer and his wife forced the bandit car to the curb and captured three men, who, together, with a fourth man arrested later, confessed to 20 robberies. The bandits were making their getaway after a robbery when the officer and his wife started the chase.

One of four bandits was shot in the right temple by Isadore Weinberg after a holdup of Weinberg's place of business in Chicago on April 3. Weinberg shot through a hole in a partition in his store as the bandits were leaving the place.

Three armed gunmen held up the drug store of William Krop and Nicholas Kirinic in Chicago on April 12. As the bandits were getting into an automobile, Kirinic fired and wounded one of the men, who was dragged into the car by his accomplices.

Two bandits were thwarted in an attempted holdup of a store in Chicago when the janitor, Charles Gunderson, 65, defied their revolvers and opened fire with a shotgun. Each of the bandits fired a shot at Gunderson but missed.

Awakened by crashing glass in his store in Worthington, Ky., on April 8, F. E. Potter opened fire. One of three youths fell mortally wounded while his two companions escaped.

In an attempt to hold up O. E. Price in his grocery store and filling station in Corinth, Miss., one of two holdup men was shot. One of the men covered Mr. Price with his revolver but the latter, rather than submit, procured his own gun and commanded the armed bandit to drop his weapon. As the weapon reached the floor, the second bandit grappled with a customer for its possession and was wounded in the struggle.

Three bandits, two of them armed, fled from the Smith County Bank at Taylorsville, Miss., on April 14 when Z. Hester, the teller, ducked below his cage and opened fire. They escaped in a waiting automobile.

After four bandits had robbed the State Bank of Burlington, Ill., on March 1, John Meyers procured a gun from a hardware store and fired on them as they were fleeing in an automobile. One shot hit the driver and seriously wounded him but the bandits, another taking the wheel, escaped.

A robber was wounded and captured in Chicago on March 12 after he and two companions had held up a grocery store. Arthur Coates, 16, a clerk in the store, shot the bandit as he was leaving the store. On the same day, Henry Ahaus, who operates a grocery store in Chicago, drove off two colored bandits with his revolver. Both robbers were wounded and captured. It was the second robbery visit the same men had made to the store.

Ten bandits were captured in Chicago on March 7 in a gun battle following an attempted holdup. Five of the bandits were later identified as participants in an \$11,000 robbery of the American National Bank and Trust Company in Berwyn on March 1.

Disregarding the threats of two bandits who entered his office in Chicago on March 5, Michael Chichowski drew his own gun and fired. The men promptly fled to a waiting automobile in which were two accomplices.

Miss Marie MacLaughlin, 17, and her mother were in their restaurant in Chicago on May 2 when two youthful bandits entered. The girl grabbed a gun and wounded one of the youths. A shot fired at Miss MacLaughlin missed her.

In Gulfport, Miss., on April 6, two men were preparing to enter a store when a neighbor fired two shots, frightening off the would-be burglars. In their anxiety to get away in their machine, they wrecked the car at a curve but escaped on foot. Blood stains indicated they were injured.

Caught in an alleged attempt to loot the office of a filling station near Richmond, Ind., on April 11, a youth was shot and killed by the night watchman of the place. The office had been robbed five times previously.

#### CENTRAL CALIFORNIA SHOOT

WITH 94 entries and 20 targets open over the 200, 300 and 600-yard ranges, the annual spring competition of the Central California Rifle Association, which included the Navy team tryouts, was held at Fort Barry, Calif., on March 20. The matches were planned and operated by Lieut. H. G. Sydenham, 30th Infantry. Lieut. E. F. Sloan, winner of the national individual championship in 1931, was range officer. The outstanding success of the matches was made possible at the order of Col. Charles B. Stone, Jr., commanding 30th Infantry and the Presidio of San Francisco.

The twelve high in the matches were selected as the team to represent the San Francisco Bay Area N. R. A. clubs against the U. S. Fleet at Fort Barry for the Peter B. Kyne trophy. The twelve top competitors were:

M. D. McVey, Olympic Club, 286; Franck Laine, Santa Clara Club, 286; J. H. Denham, Olympic Club, 285; John Adams, Stanford University, 284; E. Schwab, Capital City Club, 281; Paul Johnson, Santa Cruz Club, 281; Col. H. Comstock, Santa Rosa Club, 281; C. S. Lear, Mare Island Club, 280; W. Christensen, Santa Rosa Club, 279; W. Vestal, Santa Rosa Club, 278; Harry McCaughan, San Bruno, 277; Robert Hiatt, Santa Rosa, 277.

The matches were fired slow fire over the 200, 300 and 600-yard ranges and rapid fire over the 200 and 300-yard ranges.

The winners in other matches follow:

200-yard offhand: Franck Laine, Santa Clara, 48.  
300-yard slow fire: R. H. Smith, Santa Clara, 50-47.

600-yard slow fire: J. H. F. Denham, Olympic, 100.

Rapid fire aggregate: W. E. Vestal, Santa Rosa, 97.

#### BISLEY CONTRIBUTIONS

\$1,122

A READY response to the "Let's Send That Team to Bisley" appeal came from approximately 1,000 N. R. A. members, but the Bisley Fund is still far short of its goal of \$10,000.

The amount received in the campaign, up to the last minute permitting publication in this issue, was \$1,097.35, which, with \$25 previously contributed, brings the fund up to a total of \$1,122.35.

*Publication in these columns of the names and amounts of all contributors had been contemplated but the tremendously large number of contributors has made this impracticable. To carry out the plan would require about four pages in the N. R. A. News Section, an amount of space which unfortunately is not available.*

members cannot be sued individually and in the event of a suit against the corporation eight or nine clubs are better able to fight the suit than one club. The directors of the corporation are Carl A. Phelps, Capital City R. C., chairman; Lieut. Austin C. Matheny, Company F; John D. Truscott, Grass Valley R. C.; Leo Heimburger, Oroville R. C., and A. G. Ellis, Pit No. 1 R. C.

Trophies will be awarded at the close of the .30-caliber schedule of firing, which ends about the middle of July; one trophy for winning club, medals for winning team, and several trophies for high individual scores.

One aim of the corporation is to obtain for northern California one tryout point in the northern part of the state for the riflemen selected and sent to the National Matches as most of the states have two or more tryout points. California, with an 800-mile coast line, has only one tryout point and that is in the southern part of the state.—CARL A. PHELPS.

#### BOOSTING THE BISLEY FUND

AN EXCELLENT plan to help in the building up of the Bisley Team Fund was followed at the opening outdoor shoot of the Central Illinois Association at the Foosland range on May 8.

Five cents was deducted from every entrance fee paid and this will be contributed to the fund upon which will depend whether or not a team will be sent abroad this year.

#### NORTHERN CALIFORNIA LEAGUE

ON December 10, three delegates from each of seven civilian rifle clubs affiliated with the N. R. A. and three officers of Company F, 184th Infantry, met in Marysville, Calif., to form a league, draft a schedule and incorporate. After some delay, due to legal procedure, the incorporation papers were filed and recorded and the Northern California Rifle and Pistol League became a reality.

The charter clubs are: Capital City Rifle Club, Sacramento; Company F, 184th Infantry, Marysville; Grass Valley Rifle Club, Gridley Rifle Club, Oroville Rifle Club, Pit No. 1 Rifle Club of Fall River Mills, Pit No. 3 Rifle and Revolver Club of Barney, Montgomery Creek Rifle Club, and Fort Crook Rifle Club, Glendale. The league is divided into two divisions: Pit River division of four clubs and the Valley divisions of five clubs, but Oroville is not participating in the schedule this year.

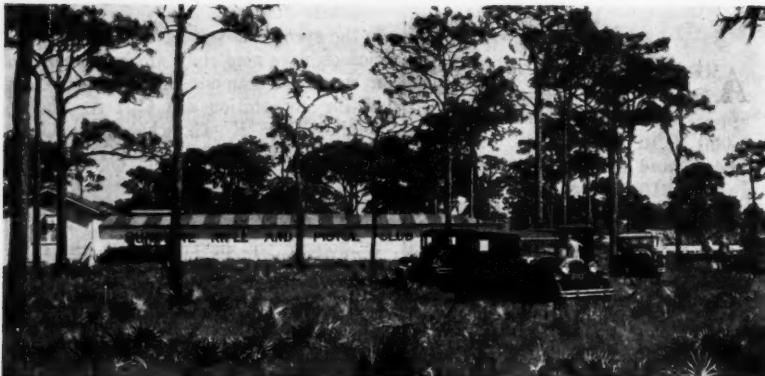
There are many advantages of clubs organizing and forming a corporation. In a corporation the officers or individual

#### SUNSHINE CLUB'S PROGRESS FAST AND ENERGETIC

PRIOR to the fall of 1927, rifle and pistol enthusiasts were greatly in the minority in and around St. Petersburg, Fla. Such few persons as were interested in shooting at that time congregated on the beach in a secluded part of the city once every fortnight, set up a target or two, paced off the correct distance and fired 10 or 20 rounds, and everyone apparently was happy.

Since there were several who took their shooting seriously, to these this arrangement was far from satisfactory. Only those who have tried to keep pistol sights trained on a bull's-eye, struggling for calmness as the sand shifted under foot until they sank in over the oxford's tops, can realize just how ruinous to good pistol practice such conditions can be.

From among this group of eight or ten men, there were two who gave a great deal of thought to improving the situation. The question was mulled over at great length, and failing to interest the "gang" in the possible erection of a clubhouse and indoor range, these two set out to canvass the city, especially among acquaintances and friends, endeavoring to make them "rifle and pistol conscious" and incidentally to raise enough cash to carry out their plan. Fortunately, at that time, depression was unknown, so our musketeers garnered \$1,600. This amount bought the lot, built the clubhouse and indoor range, equipped with an 8-target 75 foot gallery. Thus the Sunshine Rifle and Pistol Club came into being. At first we had one meeting night each week, all our practice centering on the pistol.



WHERE SUNSHINE CLUB MEETS AND SHOOTS. THE BUILDING HOUSES THE CLUB ROOMS AND INDOOR RANGE. THE OUTDOOR RANGE IS AT RIGHT.

In September, 1929, our club president, V. O. Wehle, and our club secretary, T. F. Bridgland, qualified as members of the Florida civilian rifle team and attended the National Matches at Camp Perry. They came back a very discontented pair, discontented, that is, with the 75-foot gallery which had seemed adequate before. Their appetites were whetted by the .30-caliber rifle matches. As .30-caliber was impossible, we took up small-bore rifle shooting in a large way, firing shoulder-to-shoulder matches over our indoor course whenever our challenge was accepted by rifle clubs in surrounding towns.

Our officers' insatiable rifle-shooting desires were for a time appeased until after their 1930-31 sojourn with the Florida

civilian team at Camp Perry. They again came home with a "bee in their bonnet." At semiweekly shoots they could be seen, heads together, talking, talking, talking, forgetting finally to keep voices lowered. Then we discovered that their planning had to do with the fashion of a 10-target Dewar range on a tract of land directly back of, and running parallel to, the clubhouse. This they built themselves, target racks, firing points and all. It was a back-breaking effort, as there were many tall pines to fell and palmettos to clear away. Then they decided that "just what this club needs to make it complete is a 200-yard range, and we're the lads to build it." Build it they did, and a good one it is, too, so theirs was not an empty boast.—LOLA M. BRIDGLAND.

#### MINNESOTA ASSOCIATION FORMED

MINNESOTA has joined the ranks of state association states by the formation of the Minnesota Rifle and Revolver Association. The organization grew out of the activities of rifle and revolver clubs last fall in effectively combating a vicious and loosely drawn anti-gun bill in the Minnesota Legislature.

While the new association is primarily interested in the legal and public informational angle of rifle and revolver shooting insofar as Minnesota is concerned, it will also sponsor various indoor and outdoor state association matches. At present the new association consists of 16 clubs. A considerable increase in clubs is expected in anticipation of further activities by anti-gun fanatics in the Minnesota Legislature this fall.

The officers of the association are O. A. Scattergood, president; Silas M. Bryan, vice-president; C. V. Schmitt, vice-president; Thomas Kennedy, treasurer; Judge Mathias Baldwin, chairman, committee on external affairs; Dr. O. E. Swanson, chairman, committee on internal affairs; C. M. Saam, secretary, address, 16th Floor, Telephone Building, Minneapolis, Minn.

#### PERSONNEL CHANGES IN THE INDUSTRY

A number of changes among the personnel of the arms and ammunition companies have taken place. For the information of the shooters of the country who have constant dealings with the manufacturers, the changes which have come to the attention of the N. R. A. are given below:

**Maj. John W. Hession** is now occupying an executive position with the Winchester Repeating Arms Company. Maj. Hession is one of the better known competition rifle shots of the country. During the war he was assistant ballistic engineer for one of the large ammunition manufacturers. He has been a member of nine international teams and is also widely known in the shotgun field. His work with Winchester will be in the direction of service to clubs and tournaments and to act as a liaison man to transmit to Winchester executives the desires of the shooters in matters of equipment.

**Eric Johnson** has left Winchester and is in the rifle-making business for himself

in Ardmore, Okla., having use of the entire equipment of the former Hoffman Arms Company for which he made all the barrels from the time the company was organized in 1923 until he left the concern in 1927. Eric is a rifle shooter of both national and international reputation.

**Both the Richards, Virgil and "Cap,"** have changed the red W of Winchester to the red ball of Remington on their famous shooting coats. Virgil and "Cap" are continuing the same line of activity and covering the same territory for "Palma" and "Kleanbore" that they previously took care of for "Precision" and "Stayless."

**Ned Cutting** is operating for the Peters Cartridge Company in the California territory, contacting police and rifle clubs, working under the direction of D. W. Flannigan, western representative for the company at San Francisco.

**George L. Carter**, for many years Nebraska manager for Peters, has been promoted to district sales manager. He will continue to reside in Lincoln, Nebr., but will have under his jurisdiction a sales division known as the Midwest Division, embracing Western Missouri, Western Iowa, Southern South Dakota, Wyoming to the Continental Divide, Nebraska, Colorado, Kansas and Oklahoma. He was game warden in Nebraska for eight years, when he resigned to go with Peters. He has always been identified with trap shooting and has been secretary-treasurer for 20 years of the Nebraska State Sportsmen's Association. Only last year he was again reelected to this position for a five-year term. He is one of the oldest representatives of the company.

**B. E. Strader**, formerly in charge of the New Orleans office of the Peters Company, is now general sales manager. The myriad friends of **Col. W. A. Tewes**, another of the popular "old-timers," will be glad to learn that he is now advertising manager for Peters. **M. E. Hicks**, formerly working out of Oshkosh, Wis., is now located in Decatur, Ga.; **J. A. Pits**, formerly export manager, is now located in Jacksonville, Fla., in charge of the southern territory; **"Cap." Hardy**, after being away from the company for several months, is again back with it.

**Frank J. Kahrs**, formerly assistant advertising manager of Remington, has been made advertising manager of that company.

#### BULLETIN CORRECTION

**I**n Bulletin No. 64, National Company Team Match, published last month, Company K, Fourth Infantry, Fort Lincoln, N. Dak., was listed as having placed 18th. It should have read Company I.

## COMING EVENTS

The Eastern small-bore matches will be held at Sea Girt June 30 to July 4, inclusive.

The Western Michigan N. R. A. .30-caliber shoot will be held June 4 by the Grand Rapids (Mich.) Rifle and Pistol Club, Inc., 1936 Coit Ave. N. E., Grand Rapids. The shoot will start at 1 p.m. and all entries will close at 2 p.m. Any rifle with metallic sights, any ammunition. Cash prizes and medals.

The Whiting (Iowa) Rifle Club has announced it will hold its annual small-bore rifle tournament September 26 and 27 on its range 4 miles west of Whiting. Any .22-caliber rifle and any sights except in Dewar match. The matches will be unsquared. On September 28 the first annual Central small-bore free-rifle championship will be held. C. T. Westergaard is secretary of the club.

The Wyoming Rifle Association will hold its 13th annual meeting and matches in Casper, Wyo., on July 1, 2 and 3. Fourteen different matches will comprise the program, including small-bore and pistol any metallic sights and sights as issued. Edward L. Crabb, Shoshoni, Wyo., is secretary of the association.

On the Taconic Valley Rod and Gun range at Eagle Mills, N. Y., rifle teams from the North Bennington (Vt.) Rifle Club, the Taconic Club, Schaghticoke (N. Y.) Rifle Club and the Granville (N. Y.) Rifle and Pistol Club will meet on July 10 in a 40-round, 100-yard prone match. Teams of ten men, high five to count, will fire. Pistol matches may follow the rifle events.

The Illinois State Rifle Association's schedule of matches at Fort Sheridan for June and early July is: June 5, four-man team small bore, 200 yards; June 12, individual Dewar; June 19, 800, 900 and 1,000 yards .30-caliber match, N. R. A. small-bore postal matches, small-bore practice and Legion state small-bore matches; June 26, Leech Cup .30-caliber match, N. R. A. small-bore matches and small-bore practice; July 3, .30-caliber practice and Legion .30-caliber matches; July 4, Wimbledon conditions .30-caliber and Small-Bore Wimbledon; July 10, .30-caliber Qualification Course A, small-bore practice. Programs may be obtained from D. E. Moore, Room 1504, 208 W. Washington St., Chicago.

The Fort Pitt Rifle Club (Pittsburgh, Pa.) has scheduled matches for June and early July, as follows: June 4, 300-yard match for E. H. Price trophy and 50-yard revolver match for Abbott A. Lane trophy; June 11, Army Qualification Course C; June 18, 200-yard small-bore match for Dr. D. A. Atkinson trophy and revolver match for D. J. O'Hara trophy; June 25, rising bear match for Charles H. Scheafer trophy and running deer match for C. E. Pritchett trophy; July 2, 300-yard rapid-fire match for James I. Davis trophy; July 4, 50-yard and 100-yard small-bore individual matches, Dewar and 200-yard Wimbledon; July 9, 200-yard rapid-fire match for P. C. Bradley trophy and rising bear match for T. C. Beal trophy. C. W. Freehling, 1118 Woodland Ave., N. S., Pittsburgh, is secretary of the club.

The Texas State Rifle Association will hold its .30-caliber rifle matches at Camp Mabry, Austin, June 5 to 8. The program includes 19 matches. The match for the governor's trophy will be fired the third day of the meet and the last of the matches figured in the grand aggregate, which carries with it the state championship, for the N. R. A. trophy will be fired the final day. The association will hold its small-bore matches at Shady Grove Camp, Fort Worth, June 19 and 20. Eight matches comprise the program. John Callan, 1209 West Eighth St., Austin, is secretary of the association.

The Massachusetts Rifle Association program for June includes Dewar course matches for iron sights

## FAKE ADVERTISER HUNTED

An ADVERTISEMENT of one purporting to be J. L. Miller, giving his address as Box 165, Harrisonburg, Va., succeeded in victimizing a number of shooters and has resulted in the postal authorities getting on his trail. At least 12 N. R. A. members are known to have been defrauded by the "ad," all making remittances ranging from \$10 to \$20.

The advertisement offered several varieties of shooter's accessories, including binoculars and Lyman scopes, at attractive prices. Those who responded to the advertisement received, after sending in their orders and payment, acknowledgements from Miller, and in each of the known cases the acknowledgment was dated several days later than the time it was received by the would-be purchaser. In all cases the advertiser promised that the articles desired would be shipped within about ten days. Subsequent letters addressed to him when the promised goods failed to arrive were marked, "Moved, left no forwarding address."

Immediately upon being informed of the fraud, the National Rifle Association referred the matter to the Chief Post Office Inspector, through whom it is hoped to trace down the man.

Any information in regard to the movements of this man will be appreciated by the Secretary of the National Rifle Association.

or any sights and .22-caliber re-entries for all Sundays and firing of scores in the N. R. A. matches at any time during the month. Other matches: June 5, Eastern Massachusetts League rifle and pistol matches; June 12, fourth 25-bird trap shoot; June 19, league rifle and pistol matches. Early July dates: July 3, .30-caliber training course for M. R. A. members and tryouts for Hayden match; July 4, Lambert Cup match and fifth trap shoot; July 10, league rifle and pistol matches. The matches will be fired at the Walnut Hill range. Walter S. Gibbons, 121 Florence St., Melrose, Mass., is secretary of the association.

The Yakima (Wash.) Rifle Club will hold its annual long-range rifle tournament at Yakima on July 3 and 4 under the auspices of the Washington State Rifle Association. All firing will be at 1,000 and 1,200 yards. Seven matches, in all of which trophies for one year's possession are the main prizes, are on the program. Entries should be mailed to H. A. Kenyon, secretary, Yakima Rifle Club, 18 Chicago Ave., Yakima, Wash.

The Oregon State Rifle Association lists matches for July, as follows: July 17, 82d Infantry Brigade Cup match and individual state championship match for Governor Patterson trophy; July 23 and 24, the civic championship, National Individual Match course to be fired once on each day, high aggregate to count. Harry Frazer, of Molalla, Oreg., is secretary of the association.

The Peninsula Rifle League, of California, will hold its annual banquet and presentation of medals in the Sainte Claire Hotel, San Jose, Calif., on July 23.

The Oklahoma Rifle Association will hold its seventh annual state rifle and pistol championships at Okmulgee on June 12 and 13.

The North Jersey championship shoot, second annual, will be held at the Union County rifle range, Kenilworth, near Elizabeth, on June 4 and 5. Address H. J. Wood, executive officer, 63 Parker road, Elizabeth, N. J.

The Freeport (N. Y.) Police Benevolent Association will hold its first annual open pistol and revolver match at the Freeport P. B. A. range on June 5. In the event of unfavorable weather, the match will be postponed until the following Sunday.

## RECENT EVENTS

Shoshoni, Wyoming.—The outdoor season was opened here April 10 with an entry list of 70. W. L. Seamans, Casper, won the 200 and 600-yard match with 91, outranking the 91's of W. H. Burt and H. J. Vontz, Worland; C. W. Brennan, Shoshoni, with a score of 242, won the pistol event, and T. R. French, Casper, won the small-bore match, fired at 50 yards, with 198. In a boys' match K. Vontz was the winner with 195.

Camarillo (Calif.) Rifle Club, on March 27, held a match over the National Team Match course. Dr. Philip H. Philbrook was the winner with 271, Allison was second with 257, and Miller was third with 257. The Sunday previous the club team defeated the 160th Infantry by 30 points, 200 and 300 yards slow and rapid fire, A target. The club's second members' prize shoot, Course A, rapid fire on A and B targets, Philbrook was the winner with 322, Daily was second with 319 and Miller was third with 317.

Wyoming Rifle Association won its match with the Luverne Rifle Club, 3,816 to 3,560, all four positions fired. R. L. Griffith, of the winners, was high individual with 392. In an offhand match, 50 shots at 50 feet, Luverne won, 1,919 to 1,841.

The Bartlesville (Okla.) Rifle and Pistol Club, which started shooting only January 1, won its first match, fired February 14, from the Coffeyville (Kans.) Club, 1,791 to 1,740. The course was 50 feet, iron sights, 10 shots in four positions, five men. On February 27 the club defeated the Tulsa (Okla.) Rifle Club, 1,815 to 1,799, same conditions. Tulsa, on March 19, retaliated, 1,821 to 1,776. In the deciding match of the Bartlesville-Tulsa series on April 9, Bartlesville won, 1,864 to 1,839. Bartlesville has also defeated the Beggs Rifle and Pistol Club, 2,507 to 2,417 and 1,836 to 1,747. Bartlesville is composed mostly of tyros.

The Burbank (Calif.) Rifle and Revolver Club held its W. W. Pike Trophy match on April 3 with 20 competitors. F. H. Phelps, secretary of the Burbank club, won the match with a score of 98 x 100, getting 50 at 600 yards, prone, and 48 at 300 yards, sitting. The next four high were P. H. Philbrook, 96; Milo Harrison, 96; Ned Cutting, 95; E. G. Smith, 95.

The West Coast Rifle Club, San Diego, Calif., held a shoot over the Marine range on April 24 with 17 men competing. The five high were Kanagy, 189; Brozman, 184; Bailey, 180; Parslow, 178; Ray Steinhoff, 177. The course was 200 yards standing and rapid fire and 300 yards prone and rapid.

The Columbia Rifle Club, Inc., of Hudson, N. Y., won its final league match on April 29 to take the championship of the Hudson Valley Rifle League. It defeated Hudson Rifle by a score of 930 to 856. S. Magee, of Columbia, was high individual with 190 and R. Benedict, of the same team, was a close second with 189. The match, which was fired in the four

positions, officially ended indoor shooting for the club and activities have now been transferred to the outdoors.

The Geneva (N. Y.) Rifle and Pistol Club held its annual indoor shoot on April 7 with riflemen from Rochester, Auburn, Penn Yan and Canandaigua, as well as from its own club, attending. In the main event, a kickers' handicap for a Winchester 52, eight possibles were made out of 83 tries, some of the shooters re-entering 12 and 13 times. Gene Ludlow, Penn Yan, and Don Greene, of Geneva, tied in the shoot-off. Then in the second shoot-off Greene nosed out his rival. Numerous other matches were held for rifle and pistol on luck targets and the official N. R. A. targets. Attendance has increased at both the indoor and outdoor shoots of the club.

In the recent Southern Minnesota rifle tournaments, Dodge Center won first place with a score of 1,836. The other scores were: Kasson, 1,816; Rochester, 1,783; Austin, 1,779; Owatonna, 1,707. C. W. Hanson, of Dodge Center, was high individual with 378. The matches were fired in the four positions.

The Avon (N. Y.) American Legion rifle team, in a match with the Irish Rifle Club, of Toronto, Canada, fired on the latter team's range on April 2, came out the winner by a score of 1,477 to 1,472. The match was fired at 75 feet, Canadian official targets, metallic sights.

In a .30-caliber match at Mercedes, Tex., on April 3, a team from Fort Brown, of Brownsville, defeated the Mercedes Rifle Club, 551 to 528. Sergeant Ehardt was high man on the fort team with 114 x 125, and B. O. Bowers led the Mercedes shooters with 110. The course was five shots sitting at 200 yards, five shots standing at 200 yards, ten shots rapid fire at 200 yards, five shots prone at 500 yards.

In the Hyde Park Y. M. C. A. (Chicago, Ill.) club championship matches, Sherwin Murphy topped the 19 contenders with 398, George Bjornstad was second with 396, and Robert Delpratt was third with 396. Andy Comein, placing fifth with 396, was high tyro.

The N. and W. Railway Y. M. C. A., Portsmouth, Ohio, defeated Jackson and Chillicothe in a recent match at Jackson, the "Y" men getting 930, Jackson, 925, and Chillicothe, 917. Farris, of Portsmouth, was high individual with 191. The "Y" team was the winner by a score of 784 to 782 in its last match with a Portsmouth, England, team. All previous matches were just as close. Nancy Pusateri was one of the members of the "Y" team and she turned in a 98 x 100.

#### GENEVA RIFLE AND PISTOL CLUB WINNER IN TWO LEAGUES

THE Geneva (N. Y.) Rifle and Pistol Club has shown wonderful improvement in their marksmanship to jump from the bottom, which they held for two years, to first place in both the Western and Central New York Rifle Leagues.

They tied with Penn Yan for first place in the Central New York League, winning the shoot-off by 1,403 to 1,397 on the Clifton Springs Range, which was thrown open to the teams by the Clifton Club. The first prize in this league consisted of five individual cups for the winning team.

In the Western New York League the close of the season found Avon, Canandaigua and Geneva tied for first place. This tie was shot off on the Rochester

range and was won by Geneva with 1,401 to Canandaigua's 1,390 and Avon's 1,380. First prize was a silver loving cup.

There were also first and second prizes for iron and telescope sights, being won by the following:

Telescope sights: Blensinger, Rochester, average of 281; Winters, Canandaigua, average of 280.

Metallic sights: Wall, Geneva, average of 280; Greene, Geneva, average of 279.

McVean, of Avon, was elected president of the league for the coming year, with L. A. Van Dusen, of Rochester, as secretary-treasurer. Fred Reed, of Canandaigua, and Cecil McKay, of Geneva, are the retiring president and secretary-treasurer, respectively.—DON GREENE.

#### IOWA UNIVERSITY SHOOT

THE annual small-bore shoot sponsored by the Military Department, State University of Iowa, was held April 23 in the university's armory with 16 team entries and 73 individual entries. Matches were held for both Class A and Class B shooters. Iowa won all three team matches and two of the four individual matches. The results of the matches were:

Class A, 5-man teams, prone, kneeling and standing (4 entries): University of Iowa No. 1 team, 666; Iowa No. 2 team, 635; Kemper Military Academy, 601; Iowa City Rifle and Pistol Club, 570.

Class A, 4-man teams, all four positions, one man firing one position and no more (8 entries): Iowa No. 1 team, 186; Iowa No. 2 team, 185; Iowa City Rifle and Pistol Club, 177.

Class B, 5-man teams, prone, kneeling and standing (4 entries): Iowa, No. 1, 638; Kemper, 617; Iowa City High School, 591.

Class A, individual prone (26 entries): A. W. Eckhardt, Iowa, 100-99; G. F. Martin, Iowa, 100-98-10; Ammann, Iowa, 100-98-9.

Class A, individual kneeling (17 entries): C. E. Jones, Iowa, 95; E. Allison, Iowa, 94; V. Allison, Iowa, 93.

Class A, individual standing (16 entries): McGuire, Kemper, 91; Heskett, Iowa, 86; Palik, Iowa, 85.

Class B, 4-position individual (15 entries): Brooks, Kemper, 183; Armstrong, Iowa, 181; Loftin, Kemper, 181.

#### SCABBARD AND BLADE MATCH

THE 1932 Scabbard and Blade gallery competition has been concluded with Company I, First Regiment, University of Washington, the winner with a score of 1,834 x 2,000 and Company M, Third Regiment, North Dakota Agricultural College, second with 1,823. University of Washington also won the competition in 1929 and 1931. Lehigh University was the winner in 1930.

The .15-inch bull was used this year instead of the .30-inch as used in past matches. The matches were fired in the four positions. The 22 entries finished in the following order:

University of Washington, 1,834; North Dakota Agricultural College, 1,823; West Virginia University, 1,810; South Dakota State College, 1,802; University of Wisconsin, 1,791; Louisiana State University, 1,775; University of Missouri, 1,773; University of Michigan, 1,766; Drexel Institute, 1,765; Carnegie Institute of Technology, 1,751; University of Pittsburgh, 1,729; University of Tennessee, 1,721; Gettysburg College, 1,717; University of California, 1,696; University of Iowa, 1,675; De Pauw University, 1,652; University of Idaho, 1,621; University of Wyoming, 1,606; University of Nevada, 1,578; Lehigh University, 1,492; Indiana University, 1,448; Rhode Island State College, 1,413.

The eleven high individuals were:

Malcom Rossman, Washington, 380; Ellis Lea, West Virginia, 379; D. C. McDougal, Michigan, 379; Howard Wills, Washington, 378; Martin Taylor, South Dakota, 371; L. F. Malone, West Virginia, 370; Arthur Seabury, Washington, 369; Edward Comm, North Dakota, 369; A. B. Fuller, Tennessee, 369; Louis Bohm, Wisconsin, 368; G. J. Callahan, Wisconsin, 368.

#### CHALLENGES

The Gloversville (N. Y.) High School team is seeking postal matches, metallic sights only, 15 or 25 yards, 10-man teams, five high to count. Address E. Harper, secretary, High School, Gloversville, N. Y.

A two-man team match is being sought by Harlon B. Carter and Frank W. Norris, of Austin, Texas, who announce themselves open to matches with any two men in the country eligible for the Olympic team, the matches to be fired over the Olympic course and under Olympic conditions. They are also interested in individual matches under the same conditions. Write Mr. Carter, 106 West 30th Street, Austin, Tex.

#### ILLINOIS STATE — IZAAK WALTON RIFLE AND PISTOL MATCHES

AS a curtain-raiser to the Chicago Sportsman's Show, the Illinois State Rifle Association, in cooperation with the Izaak Walton League, staged a small-bore, .30-caliber sporting rifle and pistol meet at Fort Sheridan, Ill., on April 17. More than 100 shooters participated.

L. Schmiedl, Austin Rifle Club, was high man in the small-bore match, a 20-shot course, iron sights, 10 shots at 50 and 10 at 100 yards. His total of 198 was exceptionally good considering the poor conditions. A strong, cold northeast wind off Lake Michigan bothered all the competitors, particularly in the early relays.

The eleven best scores were: L. Schmiedl, 198; H. N. Smith, 196; Fred Johansen, 196; Bradford Wiles, 196; Reese Nelson, 196; L. G. McAdams, 195; A. H. Hunter, 195; Elmer H. Wilson, 195; F. C. Dabbert, 195; Donald G. Wilson, 195; T. Henning, 194 (high tyro).

In a special .30-caliber sporting rifle match, offhand, Milton Hanson topped the field with 88 x 100. W. L. Crocroft, Evanston, who also had an 88, was outranked and took second place. L. G. McAdam and John Fuller also had 88's. Ralph Izard was fifth. In class B, the winner was R. M. Thompson.

(Continued on page 54)



# NRA JUNIOR RIFLE NEWS

(A Division of the National Rifle Association devoted to teaching every boy and girl in America the safe and accurate handling of the rifle.)

Conducted by H. H. Goebel

## Fresno and Western Leading in Biweekly Matches

**F**RESNO HIGH SCHOOL, of Fresno, Calif., and Western High School, of Washington, D. C., are making a determined fight for first place standing in this final series of biweekly team matches. In the first match Fresno tied with Central High School, of Bridgeport, Conn., with a five-man team possible and 300 points. Western High came just one joint behind, with a score of 499 and 270 points. In the second match both Fresno and Western had possible scores and 300 points, bringing Fresno's total for the series to 600 and Western High to 570. For the third match Western High repeated with a possible, adding 300 points for a total of 870. Fresno High with its team score of 499 received 270 points and a total of 870. The two final matches in the series will determine first and second-place standing.

Fresno High is also in the lead over the three series with a total of 3,660 points. Western High is runner up with 3,570 points.

Central High School, of Bridgeport, Conn., took second place in the second match with a team score of 499 and 270 points, bringing their total for the two matches to 570. This tied them with Western High. The first team at Deerfield Shields High School, Highland Park, Ill., came third with a score of 498 and 240 points for a total of 480.

In the B Division South High School of Youngstown, Ohio, turned in a score of 485 for an A Division rating in the third match in the series. This gave them 200 points, for a total of 380. Central High School, of St. Paul, Minn., came second with a score of 484 and 180 points. The first team at the Stadium High School, Tacoma, Wash., and the first team at Norwood High School, Norwood, Mass., had like scores of 482 for third-place standing and 160 points.

The three high teams in the C Division made scores warranting their advancement into Division B for the third match. The Daniel Boone Junior Rifle Club, of Lexington, Ky., placed first with a score of 469 and 100 points. The Girls Second Team at Edward Little High School, Auburn, Maine, came second with a score of 463, followed by the State Trade School of Danbury, Conn., with 460.

In the prone-standing section of the matches Western High School came first with a score of 933, Deerfield Shields High, of Highland Park, Ill., second with 921 and Malden High School of Malden, Mass., third with 890.

In this match 36 individual possibles were made, just one under the record established in the preceding event. The members of the Western High School team turned in eight possibles. H. Clagett and F. Wilkinson turned in possibles in the prone match and in the prone section of the position matches. B. Parkhill, R. Grimm and R. Beckham made their possibles in the prone match and D. Wallace made his possible in the prone section of the position matches.

Deerfield Shields High had six possibles, Jim Butterworth making one in each section of the matches. R. Gault and M. Hamilton made possibles in the prone match and D. Clark and T. Bradford in the prone stage of the position matches.

Fresno had a five-man prone possible, made by L. Mathias, H. Guffey, M. Mooney, L. Rush and M. Diamond. Central High School, of Bridgeport, Conn., with a score of 499 had four possibles, made by E. D. Gosart, H. Callahan, H. Falvey and N. Murphy. J. Greenley and H. Lord made possibles for the Edward Little Boys' High School Rifle Club, of Auburn, Maine, and W. Smythe and C.

Pick had possibles for New Trier High School, of Winnetka, Ill.

Possibles were also made by the following: F. Richardson, Trinity School, New York, N. Y.; James Whitechurch, Ardmore High School, Ardmore, Okla.; G. Lakes, Cadet Junior Rifle Club, Xenia, Ohio; J. Smith, Warren Harding High School First Team, Bridgeport, Conn.; H. Collins, Warren Harding High School Third Team, Bridgeport, Conn.; Robert Hughes, South High School, Youngstown, Ohio; W. Strohmeier, Monson Academy, Monson, Mass.; R. Dickens, Malden High School, Malden, Mass., and D. Cook, of Turlock Union High School, of Turlock, Calif.

In the third match of the series the first team of the Turlock Union High School, Turlock, Calif., tied with Western High with a possible score in the A Division for 300 points. Deerfield Shields First Team and Fresno High School tied for second place standing with scores of 499 and 270 points. Central High School, of Bridgeport, Conn., came third with a score of 498 and 240 points.

Central High School, of St. Paul, Minn., was the lone B Division team to turn in a score of A Division rating. Central High's score was 492. The first team at Norwood High School, Norwood, Mass., came second with a score of 484. Lakewood High School, of Lakewood, Ohio, and the first team at the Stadium High School, Tacoma, Wash., came third with scores of 483.

In the C Division the second team at Turlock Union High School, Turlock, Calif., placed high with a score of 457, followed by the Silver Bay School of Silver Bay, Long Island, N. Y., with 455, and Malden High School's second team, of Malden, Mass., with 454.

In the two-position section, prone and standing, Western High School continued in the lead with a score of 930, Deerfield Shields High School, of Highland Park, Ill., coming second with 922, and Far Rockaway High School, of Far Rockaway, N. Y., third with 903.

Thirty-nine individual possibles were made in this match for a new record. Western High School again led with eight possibles, R. Grimm and F. Wilkinson having two apiece. R. Beckham, J. Long, H. Clagett and S. Strong also made possibles for Western. Turlock Union High School's team possible was made by E.

Heidt, C. Blitlin, B. Leoni, D. Cook and H. Dion. Deerfield Shields High also had five possibles, Jim Butterworth making one in the prone and the prone-standing sections of the matches. J. Jefferson, R. Gault and W. Hamilton made their possibles in the prone match. Fresno High had four possibles, made by L. Mathias, H. Guffey, M. Mooney and R. Kunselman. The Mahoning Junior Rifle Club, of Youngstown, Ohio, had three possibles, made by W. Foley, Robert Hughes and Roger Hughes. Central High School, of Bridgeport, Conn., also had three possibles, made by H. Falvey, E. Gosart and S. Nelson. Monson Academy had two

possibles, made by Roland Kimball and G. Jackson. Possibles were made by the following: W. Biastock, Waukegan High, Waukegan, Ill.; J. Fitzgerald, New Haven High, New Haven, Conn.; J. Boyd, Kingswood School, W. Hartford, Conn.; W. Smythe, New Trier High, Winnetka, Ill.; G. Lakes, Cadet Junior Rifle Club, of Xenia, Ohio; A. Mizak, Warren Harding High, Bridgeport, Conn.; R. Taylor, Malden High, Malden, Mass.; B. Ames, Edward Little High, of Auburn, Maine; and R. Regan, Far Rockaway High School, Far Rockaway, N. Y.

#### BIWEEKLY MATCHES—THIRD SERIES

Official Bulletin No. 3

##### PRONE POSITION

###### DIVISION A

Club	Location	Score	Points	Total	Total— 3 Series
Turlock Union High—1st, Turlock, Calif.		500	300	570	2,070
Western High Boys, Washington, D. C.		500	300	570	3,570
Deerfield Shields High—1st, Highland Park, Ill.		499	270	750	2,090
Fresno High, Fresno, Calif.		499	270	870	3,660
Central High, Bridgeport, Conn.		498	240	810	3,410
Mahoning, J. R. C., Youngstown, Ohio		497	210	300	1,030
Cadet J. R. C., Xenia, Ohio		495	180	330	890
Edward Little High Boys—1st, Auburn, Maine		495	180	600	2,130
New Trier High—1st, Winnetka, Ill.		494	150	510	1,840
Ardmore High, Ardmore, Okla.		493	120	360	1,800
Monson Academy, Monson, Mass.		493	120	150	700
Warren Harding High—1st, Bridgeport, Conn.		491	90	450	2,130
Waukegan Township High, Waukegan, Ill.		491	90	300	1,180
148th Infantry, J. R. C., Clyde, Ohio		487	60	60	410
Kingswood School, W. Hartford, Conn.		487	60	60	660
New Haven High, New Haven, Conn.		487	60	90	390
Richmond Hill High—1st, Richmond Hill, N. Y.		486	30	240	1,540
New Trier High—2d, Winnetka, Ill.		480			360
South High, Youngstown, Ohio		479			1,500
West High, Waterloo, Iowa		478			1,410
Central High Girls, Washington, D. C.		471			490
Edward Little Boys—2d, Auburn, Maine		469			480

###### DIVISION B

\*A Division Teams for Match of Week Ending April 30

Club	Location	Score	Points	Total	Total— 3 Series
Norwood High 1st, Norwood, Mass.		484	200	540	1,020
Lakewood High, Lakewood, Ohio		483	180	220	220
Stadium High Boys 1st, Tacoma, Wash.		483	180	540	1,580
Central High, St. Paul, Minn.		482	160	480	1,060
Upper Darby High 1st, Upper Darby, Pa.		482	160	460	1,130
Peacock Mill Acad., San Antonio, Tex.		481	140	180	160
Blogett Vocal, High, Syracuse, N. Y.		480	120	280	280
Technical High, Springfield, Mass.		478	100	320	540
Stadium High Girls, Tacoma, Wash.		477	80	200	330
Edward Little Girls 1st, Auburn, Me.		475	60	220	760
Crosby High, Waterbury, Conn.		474	40	120	400
Far Rockaway High, Far Rockaway, N. Y.		474	40	380	380
Arcola J. R. C., Arcola, Ind.		473	20	160	360
Eastern High, Washington, D. C.		473	20	160	160
Malden High 1st, Malden, Mass.		473	20	240	920
Catonsville Hi. & J. R. C., Catonsville, Md.		472			210
Upper Darby Hi. 2nd, Upper Darby, Pa.		471			450
State Trade School, Danbury, Ct.		467			150
Evanston Township Hi. Girls, Evanston, Ill.		466			20
Daniel Boone J. R. C., Lexington, Ky.		465			200
Norwood High 2nd, Norwood, Mass.		464			350
Trinity School, New York, N. Y.		460			420
Edward Little High Girls 2nd, Auburn, Me.		458			200
Warren Harding Hi. 3rd, Bridgeport, Ct.		458			290
Deerfield Shields Hi. 2nd, Highland Pk., Ill.		432			180

###### DIVISION C

Club	Location	Score	Points	Total	Total— 2 Series
Turlock Union High—2d, Turlock, Calif.		457	100	230	520
Silver Bay School, Silver Bay, L. I., N. Y.		455	90	160	300
Malden High—2d, Malden, Mass.		454	80	240	840
Loch Haven High, Loch Haven, Pa.		451	70	120	120
South High—2d, Denver, Colo.		435	60	80	80
Boys Vocational School, Newark, N. J.		420	50	110	110
South High—1st, Denver, Colo.		413	40	50	50
Draper J. R. C., Draper, S. Dak.		375	30	30	30

###### 2-Position: Prone—Standing

Club	Location	Score	Points	Total	Total— 3 Series
Western High, Washington, D. C.		930	100	300	1,280
Deerfield Shields High, Highland Park, Ill.		922	90	260	310
Far Rockaway High, Far Rockaway, N. Y.		903	80	210	210
Malden High, Malden, Mass.		893	70	210	860
Massena High School, Massena, N. Y.		826	60	110	110
Crosby High, Waterbury, Conn.		747	50	140	160

#### MIDWEST SCHOLASTIC MEET

ELEVEN schools, some of them represented by several teams, competed in the first annual Midwest Interscholastic Matches which were fired April 23d on the ranges of the Evanston Township (Ill.) High School. Altogether there were 27 entries in the three team matches and 128 in the four individual matches.

The individual prone and sitting match furnished a real surprise when Miss Carolyn Verkes, of New Trier High School, shot her way to victory over Charles R. Fromberg, of Culver Military Academy. Miss Verkes came to the matches as a spectator but was allowed to enter the event when it was decided there was no provision in the match rules specifically barring girls. She fired 196, the same as the Culver cadet, but she won the match by having a 98 sitting, while her rival had 97 in that position.

The shoot was sponsored by Evanston Post No. 42, American Legion, and the North Shore Chapter, Reserve Officers' Association, in cooperation with the N. R. A., and with the assistance of the Evanston Township School. Medals for the matches were supplied by the National Rifle Association. The matches were fired at 50 feet with metallic sights. Maj. Francis W. Parker was range officer.

The three high teams or individuals follow:

Four-Man Team Prone Match (15 entries): Waukegan High School, 392; Evanston No. 3 team, 383; Cleveland High School, St. Louis, 381.

Four-Man Team Four-Position Match (7 entries): Cleveland, 683; Deerfield Shields High School, 644; Evanston No. 6 team, 641.

Military Four-Position Match (5 entries): Culver No. 1 team, 912; Culver No. 2 team, 877; Evanston No. 1 team, 870.

Individual Prone (56 entries): Cramer, Evanston, 198; Lehwaldt, Waukegan, 197; Stiles, Waukegan, 197.

Individual Prone-Sitting (35 entries): Miss Carolyn Verkes, New Trier, 196 (98 pr., 98 sit.); Fromberg, Culver, 196 (99 pr., 97 sit.); Kohlitz, Culver, 194 (97 pr., 97 sit.).

Individual Standing-Kneeling (22 entries): Borg, Culver, 185 (91 st., 94 kn.); Fromberg, Culver, 180 (86 st., 94 kn.); Kohlitz, Culver, 177 (82 st., 95 pr.).

Individual Rapid-Fire (15 entries): Mayer, Culver, 100; Goode, Cleveland, 100; Cramer, Evanston, 100.

#### A NEW MATCH RIFLE FOR JUNIORS

THE N. R. A. Junior 33 is a light-weight, bolt-action, single-shot Remington rifle, bored and chambered for the .22 long-rifle caliber cartridge. It is designed to safely fire the modern high-velocity ammunition. It has a selected barrel, adjusted trigger pull, target sights, shooting sling, and a well-proportioned stock—every essential for target training and match shooting. It has been adopted by the National Rifle Association as a Junior match rifle, and it will be sold exclusively by the N. R. A. Service Company. The price to N. R. A. members is \$10.50.

This rifle is a safe arm for boys' use. The cocking knob on the striker must be deliberately drawn back for each shot. When cocked, the knob may be turned to the right to lock the action against the possibility of discharge. The cocking knob is designed to prevent slipping from the fingers. When ready to fire a red warning signal is exposed on the cocking piece.

The stock fits well in all positions and permits a secure hold and comfortable aim. The action is positive in feeding, firing and ejecting cases, and it operates very smoothly. The trigger pull is clean and without creep. The average weight is 4 pounds and 13 ounces. It is offered as a completely equipped match rifle for Juniors. The price is no criterion. Any boy will be proud to own the N. R. A. Junior 33. Older "boys," too, will want this rifle as a handy light-weight small-game sporter. A complete description is given in the Dope Bag section, this issue.

#### EXPERT RIFLEMEN

W. Gordon, Alexandria, Va.  
Ludwig Fritz, Kansas City, Mo.  
Alwin Cramer, Evanston, Ill.  
Robert Nichols, Ridgewood, N. J.  
Bailey E. Bell, Lexington, Mo.  
Tom. R. Bernier, Mendota, Minn.  
Ivan Brinker, Waddams Grove, Ill.  
Emmett Boehe, Lena, Ill.  
Frederick Kuck, St. Paul, Minn.  
Carol Damon, Council Bluffs, Iowa  
Maxine McDonagle, Council Bluffs, Iowa  
Gloria Rapp, Council Bluffs, Iowa  
Viola Richardson, Council Bluffs, Iowa  
Doris White, Council Bluffs, Iowa  
Waldo Huneke, Lena, Ill.  
Urban Johnson, Morris, Minn.

Eugene Haun, Knoxville, Tenn.  
James Rountree, Knoxville, Tenn.  
Warren Whitcher, Knoxville, Tenn.  
William Ramm, Davenport, Iowa  
Ross LaMotte, Tacoma, Wash.  
Richard C. Diederich, Detroit, Mich.  
Charles Stegner, Morris, Minn.  
Perry Bass, Pottstown, Pa.  
Harry Miller, Akron, Ohio  
J. R. Aid, Boonville, Mo.  
W. E. Newman, Boonville, Mo.  
Clifford Hoyer, Chicago, Ill.  
Elmer Brammeier, St. Louis, Mo.  
Jerome Block, Chicago, Ill.  
Adele Anderson, Council Bluffs, Iowa  
Catherine Lehman, Council Bluffs, Iowa  
Ruth Pagh, Council Bluffs, Iowa  
Bob Morrison, Winnemucca, Nev.  
Frank Gilmore, San Francisco, Calif.  
Douglas Stewart, Detroit, Mich.  
Raymond Feddern, Chicago, Ill.  
Richard Lamm, Chicago, Ill.  
C. Russell Miller, Norwood, Mass.  
D. S. Thompson, Boonville, Mo.  
John A. Greenleaf, Auburn, Maine  
Urban Zeigner, Chicago, Ill.  
Adrian P. Wilson, Jr., Memphis, Tenn.  
Leon MacGill, Washington, D. C.  
Eugene Jones, San Bernardino, Calif.  
Thomas Lee Duncan, Brooklyn, N. Y.  
William E. Brandow, Minneapolis, Minn.

Luverne Rudeen, Morris, Minn.  
Charles R. Holman, Norwood, Mass.  
Millard Warren, Knoxville, Tenn.  
Raymond Renstad, Morris, Minn.  
Edwin Staubus, Anacostia, D. C.  
Jerome Block, Chicago, Ill.  
Frank W. Norris, Austin, Tex.  
Henry Miller, Chicago, Ill.  
Joseph F. Older, Chicago, Ill.

#### COMMISSIONED INSTRUCTORS

Allan D. McNeil, Alpena, Mich.  
James K. Putt, Griggsville, Ill.  
A. M. Boss, Bisbee, Ariz.  
Silvio Garofolo, Schenectady, N. Y.  
Oliver Rolf, Schenectady, N. Y.  
Kenneth H. Stump, Chicago, Ill.  
J. G. Dixon, Wilkes-Barre, Pa.  
A. C. Calm, Wilkes-Barre, Pa.  
Harley Ferris, Draper, S. Dak.  
A. S. Cadwallader, Bristolville, Ohio  
C. M. Haag, Uniontown, Pa.  
Ivan Brinker, Waddams Grove, Ill.  
George Huckabee, Ponca City, Okla.  
Sigrid Bergerson, Tacoma, Wash.  
Alice Jones, Tacoma, Wash.  
James Fisher, Eau Claire, Wis.  
A. R. Evearts, Green Bay, Wis.  
George K. Blankenbeckler, Bristol, Tenn.

E. Boeke, Lena, Ill.

J. A. Beal, Cleveland, Ohio

Ben G. Steele, Forsyth, Mont.

M. D. Gow, Sheakleyville, Pa.

George M. Brown, Como, Miss.



WESTERN HIGH SCHOOL RIFLE TEAM, WASHINGTON, D. C. INTERSCHOLASTIC TEAM CHAMPIONS. LEFT TO RIGHT—R. BECKHAM, F. WILKINSON, CAPTAIN; W. PARKHILL, R. GRIMM AND H. CLAGETT

R. C. Blodgett, Glen Ridge, N. J.  
 H. P. Geiger, Hattiesburg, Miss.  
 John O'Brien, W. Roxbury, Mass.  
 Florin C. Williams, Harlan, Ind.  
 Ernest Beall, Newman, Calif.  
 Richard J. Cole, Kingston, N. Y.  
 C. C. Wilson, Hutchinson, Kans.  
 H. A. Hermann, Highland Park, Mich.

### "MOSTLY PERSONAL"

EUGENE JONES, 17-year-old boy of San Bernardino, Calif., and the youngest member of the Colton Rifle Club, has won state-wide publicity for his recent display of skill with the rifle. In a match held by the Colton Rifle Club over the 50 and 100-yard ranges, Jones tied with John Osborn with a total score of 393, but in breaking the tie it was found that he had the highest score over the 100-yard range and thereby was entitled to the coveted trophy and gold medal. The shoot, held at Reehee Canyon Range of the local club, was under the Dewar regulations with small-bore rifles, and this same course will again be fired by team members within a short time. Regulations specify that after winning the trophy three times in succession it becomes the property of the competitor.

To prove that Eugene was not favored with mere luck he captured first honors in the western sectional Olympic tryouts held at Long Beach over the following week end, beating some of the best marksmen around, and surprising even his strongest supporters. He will next enter the semifinals at San Francisco and if successful there will enter the Olympic Games in Los Angeles as a member of the Olympic Team. The best of luck to him!

INSTRUCTOR TEX MIDDLETON's "Golden Bears" proved the stronger by 38 points in a recent shoulder-to-shoulder match with the St. Catherine's School Cadets on the Golden Bear J. R. C. range at Anaheim, Calif. Four strings were fired by each competitor, and Johnny Stewart came through as the leading man for the match with a score of 125, representing the Bears, while Manning led the Cadets with a score of 117. A return match is planned, and Instructor Middleton is looking around for other junior clubs in nearby vicinities who would be interested in such competition.

TWO DISTINGUISHED RIFLEMEN were selected to fire the annual club members' match of the Grover Cleveland High School Rifle Club, St. Louis, Mo. The match was fired during the three 12-minute auditorium sessions at the end of the lunch periods and one-third of the school was permitted to attend each time. Three

shots prone were fired, three shots sitting, two kneeling and two standing in each one of the three sessions. Charles Good placed high for the Club Members' Medal with a total of 275, while Paul McNeill followed with 265. This shoot was open to the boys' division only and within a short time the girls club members' match will be fired in the same manner.

THE DICKENS TROPHY offered annually since 1926 to competitive junior teams in Allen County, Ind., was awarded to the Arcola High School Greyhounds of Arcola, Ind., in the deciding shoulder-to-shoulder match held on the Fort Wayne Armory range. Five teams participated, representing the Arcola High School, Harlan High School, South Side High School, Elmhurst High School and North Side High School. This trophy is to be held for one year or until the match is again fired for standing. In 1930 the Arcola team won the trophy for the first time and, since the match was omitted in the 1931 schedule, this is the second consecutive win for them.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,  
 Of THE N. R. A. JUNIOR RIFLE NEWS, published monthly at Washington, D. C., for April 1, 1932.  
 City of Washington, District of Columbia, us.:

Before me, a Notary Public, in and for the District aforesaid, personally appeared Herbert H. Goebel, who, having been duly sworn according to law, deposes and says that he is the editor of the N. R. A. JUNIOR RIFLE NEWS, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:  
 Publisher, National Rifle Association of America, Washington, D. C.  
 Editor, Herbert H. Goebel, 816 Barr Building, Washington, D. C.  
 Managing Editor, none.  
 Business Managers, Executive Committee, National Rifle Association of America.

2. That the owner is: National Rifle Association of America.

That the principal officers are:  
 Brig. Gen. G. A. Fraser, Bismarck, N. Dakota, President.  
 Maj. Gen. F. C. Ainsworth, Washington, D. C., First Vice-President.

Karl T. Frederick, New York City, New York, Second Vice-President.  
 Gustavus D. Pope, Detroit, Michigan, Third Vice-President.  
 Brig. Gen. M. A. Reckord, Baltimore, Md., Executive Vice-President.

C. B. Lister, Washington, D. C., Secretary-Treasurer.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest, direct or indirect, in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is—(This information is required from daily publications only.)

H. H. GOEBEL, Manager and Editor.  
 Sworn to and subscribed before me this 25th day of March, 1932.

HELEN A. LOSANO,  
 (Seal) Notary Public.  
 (My commission expires September 10, 1933.)

.... 810.50 F. O. B. Washington ....  
**New! N. R. A. Junior 33 New!**  
 SINGLE SHOT BOLT ACTION RIFLE  
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 Dallas, Texas



Conducted by E. F. Mitchell

## Use of Chemicals by Law-Enforcement Officers in Civil Disorders

### V—Illustrative Problems in the Use of Chemicals

#### Part I

By CAPTAIN C. M. KELLOGG, C. W. S. (D. O. L.)  
and MAJOR A. F. SPRING, C. W. Reserves

THREE thousand rioters—the River Rouge plant of the Ford Motor Company as their objective. Thirty-five law-enforcement officers equipped with 16 tear gas hand grenades and one tear gas gun with a few short range and long range shells. The result—4 dead from gunfire; 30 or more casualties among the rioters; numerous injuries on the part of the law-enforcement officers.

The above is a brief picture of the demonstration which occurred on March 7, 1932, in Dearborn, Michigan. In relating this dramatic situation, the writers have obtained information from personal interviews with law-enforcement officers who participated in the riot, press reports, photographs and other accounts which appear to be thoroughly reliable.

The *Daily Worker* of Friday, March 4, had called for a hunger march of the unemployed from Detroit to the Ford plant which is located just over the city line in Dearborn. An extensive program of 14 demands was to be presented to officials of the Ford Motor Company relative to the welfare of their members, including the right to organize.

The mob formed in Detroit, as a permit to march in that city had been obtained. They had not requested a per-

mit from the city of Dearborn. The march was clearly of communistic inspiration. This was confirmed by the usual profusion of banners and placards which were displayed. It was estimated that the crowd was composed of about 50 per cent communists, but doubtless contained some former Ford employees and many harmless persons who hoped, in some vague way, to aid the employment situation by marching.

Thirty-five Dearborn police officers were assigned to duty near the Ford plant to meet this situation. Due to an underestimate of the determination of the marchers, there were reported to have been only nine officers available during the encounter at the city line. All of the tear gas equipment in the department was in the hands of these nine officers. This consisted of 16 slow burning tear gas hand grenades and one 1½-inch gun with some short range and long range shells.

The rioters had been escorted through the city of Detroit by the Detroit Police Department and had marched in an orderly manner, but with increasing spirit, until they reached the city limits of Dearborn at about 2:30 p. m., where they were met by a representative of the Dearborn Police Department. This officer

called for the leaders of the crowd, but received the reply that they were all leaders, when he was knocked to the ground and beaten before being rescued by fellow officers. The mob now surged forward and after they had advanced a short distance, all 16 of the tear gas hand grenades were thrown in front of the rioters. The weather was cold and the wind was blowing at least 25 miles per hour. The grenades were evidently used without unified control, as photographs show they were not uniformly distributed and were thrown very close to the marchers.

When the tear gas reached the head of the column, the results appeared very promising. The cloud caught many of the rioters who disappeared across a steep railroad embankment to their right. Some of the crowd now cut in on the windward side and recovered six of these grenades as there was no organized effort to defend them from capture. It being a cold day, many of the rioters wore gloves. The result was that three were thrown back into the ranks of the police officers, while an equal number were delegated to the nearby River Rouge.

Although the initial tear gas cloud had temporarily halted a part of the mob, the

main body of the procession was entirely unaffected and rapidly pressed forward. At this point an officer with a 1½-inch chemical gun held the crowd at bay for a brief time by the use of two long range shells and one short range shell. One of these long-range shells, fired into the crowd at moderately short range, is reported to have struck a rioter between the eyes and lifted him off his feet. The short range shell blasted directly into the mob was related to have been very effective and checked their advance. When attempt was made to reload the gun, it was found that the paper shell case was jammed in the barrel. By this time the mob was pressing in closer and were picking up rocks, bricks and small pieces of concrete which were showered on the officers in a veritable rain. Few policemen escaped some injury. The officers were driven back for about a mile before a mighty barrage of missiles laid down by the rioters who were determined to storm the gates of the Ford property. During this retreat the chemical riot gun was cleared and another shell was fired from it which completed the use of tear gas during the demonstration.

After having driven back the officers a distance of about one-half mile, the rioters encountered two Dearborn fire engines and details of firemen attempting to bring fire hose into play. The crowd leaped on the firemen before connections could be made, cut the hose and rolled the engines away from the hydrant.

The body of the mob now flushed by victory continued their drive to the main gates of the mammoth River Rouge Ford factory, at which point the police officers reformed their lines. An attempt to use a fire hose from within the gates was without success, as the mob moved to a position which was out of range of the stream. Within a short time, police stated that bullets began to ricochet from the walls in the rear of them and one policeman reported that he saw a rioter lying beneath an automobile in a parking space fire six shots at him without making a hit. The police officers then formed a line and opened fire. Four rioters were killed and a casualty list of approximately 30 was the result. The mob then dispersed, both police and marchers blaming each other for the tragic ending of the demonstration.

It is believed that a brief summary of the principal points brought out in this riot will be of interest to every law-enforcement agency:

1. *Insufficient Quantity of Chemical Munitions.*—Had there been available a large quantity of chemical material, there is no doubt but what the mob could have been promptly dispersed without bloodshed. It would have required a number

of times the 16 grenades that were actually used in order to build up an initial concentration of tear gas that would have been incapacitating and provide a sustained cloud on the main body of marchers.

2. *Type of Chemical Munitions.*—The available supply of tear gas hand grenades was of the slow burning variety. Over a third of all the grenades that were used were recovered by members of the mob. Modern fast burning or explosive chemical munitions would have doubtless eliminated this action. Candles would have proved to be of considerably more value than grenades because they contain a much greater quantity of chemical agent. In any event, the use of tear gas munitions must be concerted and protection for slow burning munitions must be definite and apparent, especially until the initial cloud is built up.

3. *Weather Conditions.*—A gusty wind of from 25 to 30 miles per hour made it very difficult to build up an effective concentration of chemical agents. This fact further strengthens the necessity of having an ample supply of the latest type of chemical munitions available to meet any adverse weather conditions.

4. *Use of Screening Smoke.*—It is believed that screening smoke (HC) could have been used to excellent advantage in this demonstration. This assumes, of course, that sufficient tear gas munitions were used at the same time. Covering the mob with an opaque white screening smoke carries a powerful psychological effect. The rioters would lose contact in the dense smoke which would also create the belief that the entire cloud contained tear gas.

5. *Training in the Use of Chemical Munitions.*—Proper training of officers in the use of chemical munitions is rapidly being recognized by all leading law-enforcement agencies. Chemical squads should be formed and thoroughly trained in the tactical uses of chemical agents. Periodic tests of chemical material should be made at regular intervals to determine the reliability and effectiveness of munitions carried in stock by the department. Training classes can be conveniently conducted during these testing periods.

We firmly believe that the entire Dearborn Police Department did everything within their power to quell this assemblage with the minimum of bloodshed and should be congratulated for making such a determined stand in the face of so many handicaps. The fact that the police officers were driven back by a barrage of bricks and stones is absolutely no reflection on the courage of the members of this department. Their undeniable fortitude was unquestionably demonstrated when the officers stood their ground to

the last minute, after their supply of chemical munitions had been exhausted. The only other alternative would have been to turn and fire into the midst of the pursuers which would doubtless have resulted in a large casualty list.

## Introduction to Problems

In the problems that follow, the writers have attempted to present two typical situations. These problems are similar to those used in the examinations at the 1931 Police School, Camp Perry, Ohio.

It is suggested that solutions to these problems be prepared by all those interested in this subject. In the next article of this series a solution to each of these problems will be published.

### Problem No. 1

#### A Barricade in a Center of Population

##### 1. Situation:

(a) Plate I shows a ground plan of the apartment and surrounding area.

(b) Three criminals have barricaded themselves in a six-room flat on Grand Avenue between 46th and 47th streets. The flat consists of a ground and second floor and a basement. Each flat has an entrance, front and back, and has no connection with the adjoining premises, the east and west walls being made of tile. There are three windows to a floor both front and rear as well as two basement windows in the rear.

The section of the city in which this block is located is thickly populated.

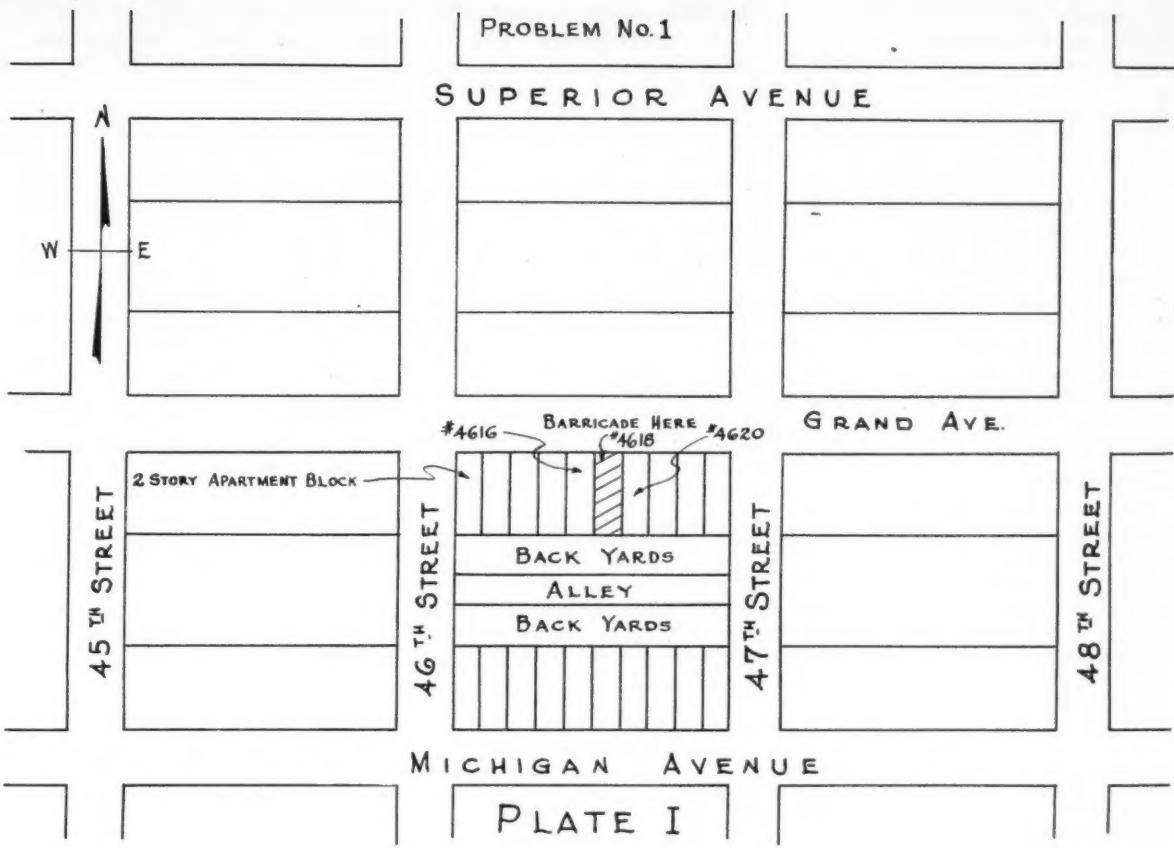
(c) The three criminals are wanted for serious crimes and it is believed that they will die fighting rather than surrender. They are well supplied with small arms and ammunition and have defied the police to come in and get them. They have no gas protection.

(d) Police Captain "C," commanding two squad cars of five officers each, has been instructed to take the criminals alive if circumstances permit. Each of the two squads is composed of a sergeant and four patrolmen. The police detail has four short-barrel repeating 12-gauge shotguns with six dozen shells, 12 burning type CN hand grenades, 12 new type fast burning CN candles and 11 gas masks. All officers are provided with revolvers and a quantity of small-arms ammunition.

##### 2. Requirement:

(a) The action taken, together with orders and instructions issued by Police Captain 'C.'

NOTE.—The members of the 1931 class at the Police School, Camp Perry, Ohio, were given one-half hour to solve this problem.



### Problem No. 2

#### A Riot in a Penal Institution

##### 1. General Situation:

(a) Plate II shows a ground plan of the prison. This has been drawn to scale as indicated.

(b) There are 953 inmates in the institution, the normal capacity being 600.

(c) The total number of men employed by the institution is 98. This includes 72 men during the day and 26 at night.

##### 2. Special Situation:

(a) The main building with its adjoining wings are all fireproof, being built of stone and steel. The separate cell block to the north is fireproof except for a wooden floor over stone. The group of shop buildings in the main enclosure is not fireproof. The triangular area to the east was added to the penitentiary in 1923 and is separated from the main enclosure by the old wall. All walls are 25 feet in height and are traversed by a substantial walk on the outside of the wall which provides cover, observation and communication for the guards. No walk extends along the wall to the northeast between the vehicular gate and the railroad gate

Guard towers Nos. 4, 9 and 8 are equipped with one automatic rifle, one .32 or .38-caliber revolver and CN hand grenades. All other guard towers have riot pump guns substituted for the automatic rifles; other arms are the same. In a locker placed in the office the remaining arms are stored. This locker contains 10 commercial gas masks (canisters attached to facepiece), 12 chemical police billies with 36 chemical shells for same, 48 burning-type CN hand grenades, 20 revolvers .32 and .38-caliber with 10,000 rounds of ammunition and 10 riot guns, 12-gauge.

(b) At 9:30 a.m. May 12th, convicts in the printing and mattress shop overpowered the inside guards, inciting a riot. This disturbance spread to the other shops rapidly; 14 of the inside guards are held captive by men who threaten to kill them unless released by 10 a.m. Sentries in guard towers Nos. 6, 7, 8 and 9 are fired on at 9:35 a.m. It is not known the number of weapons in the hands of the convicts or the source of supply. Convicts in the outside yard to the east are in an uproar. Three men have been shot while attempting to escape over the wall between the railroad gate and guard tower No. 3. At 9:45 a.m. the bodies of two

of the inside guards are thrown from a third story window of the clothing shop onto the main parade. About 500 of the convicts are on the ground floor of the shop buildings, demanding entrance to their cells in order to escape the riot. One hundred and fifty convicts in the east enclosure are likewise demanding admittance to their cells for the same purpose. The instigators, estimated to be about 25 men and supported by about 200 others, occupy the upper floors of the shop group of buildings.

At 9:50 a.m. the rioters repeat the demand for release and threaten to set fire to the laundry building. At the same time the bodies of three more of the guards are thrown out of the clothing shop. It is believed that this untimely murder of the guards has been accomplished primarily as a display of force on the part of the rioters. The deputy warden cannot be found. He was last seen at 9:31 a.m. going into the hospital. At 9:55 a.m. six convicts out of a group of 30 were shot by the rioters while running from the hospital to the cover of the east wing. This action discourages any desertion. The wind is blowing from

the northeast about 5 miles per hour. Weather cool and partly cloudy.

The authorities control the main building, all of the walls and the disciplinary cell block south of guard tower No. 2.

**NOTE.**—The penitentiary is located in the outskirts of a large city and the warden has made arrangements to call on the city police and fire departments in case of a serious emergency. The area south and west of the prison is thickly populated. The police department has a special riot squad trained in the expert use of small arms and chemicals and equipped with the most recent chemical weapons and riot guns. This includes Thompson Sub-Machine guns, automatic rifles, fast burning candles, explosive chemical grenades and chemical field guns.

### 3. Requirement:

The actions taken and the orders issued by the warden, "Cherry Hill," from 9:30 a.m. to 10 a.m.

**NOTE.**—This should include what he does, where he goes and the substance of orders issued and messages sent, in chronological order.

### ANOTHER PHASE OF THE GUN PROBLEM

Most of us are familiar with the usual arguments against stringent anti-gun laws—that they have proven unenforceable whenever tried, that they are a denial of constitutional rights, and that they actually benefit the criminal, who makes a practice of breaking laws.

But there is still another side to the problem that is of tremendous importance—the relation of the gun manufacturers to national defense. If we legislate them out of business now, we can hardly expect them to keep their factories prepared to meet a need such as that of the last war.

The efficiency of American troops has been largely due to two things—the fact that, in civil life, many of them were familiar with firearms, and that our arms manufacturers, cooperating with the government, have developed and perfected a type of equipment that equals any in the world.

In the year 1776 drills were given to systematize loading of muskets. The commands for firing and loading were 12 in number—and required nineteen separate

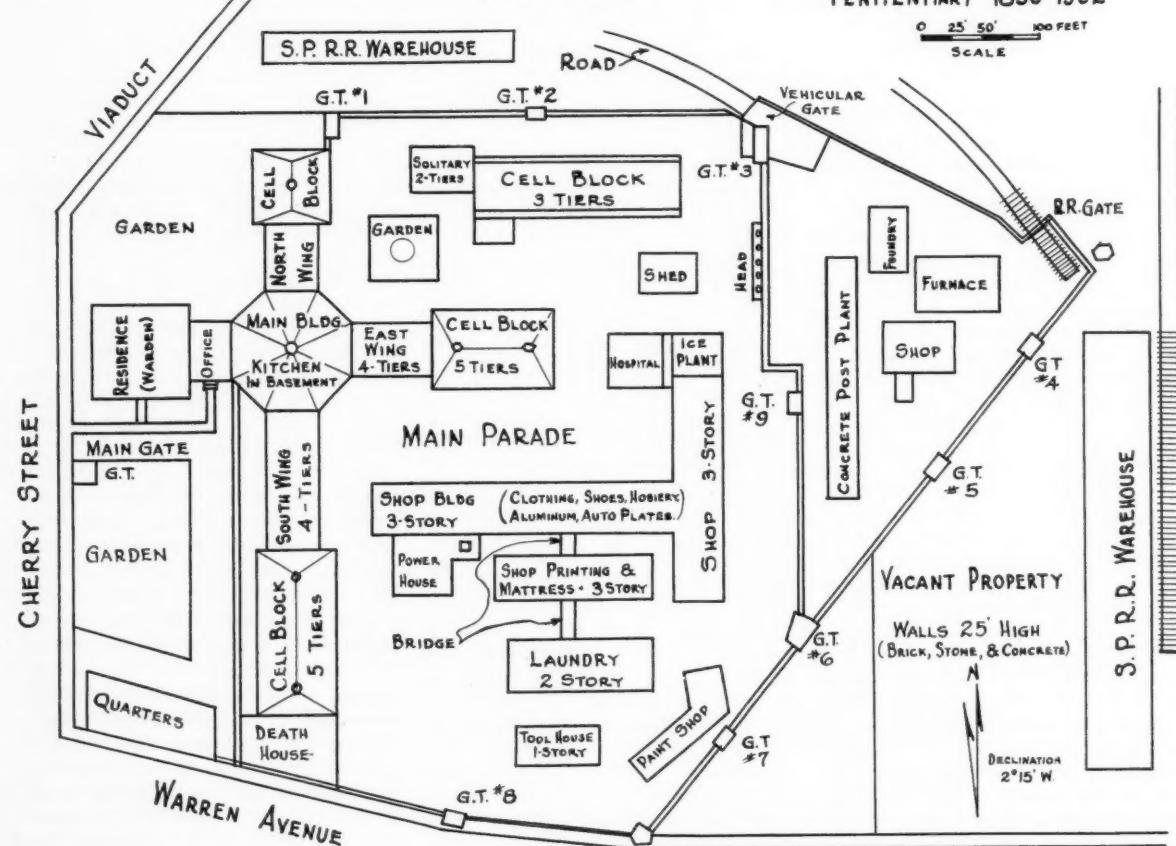
motions running the gamut from "Half-cock your fire locks!" "Shut your pans!" to "Poise your firelock!" and, after the eighteen preliminary motions—"Fire!" There were as many kinds of rifles as there were gunsmiths to make them. Soldiers, side by side in the ranks, according to an authority, could scarcely use one another's weapons and could not load with one another's bullets.

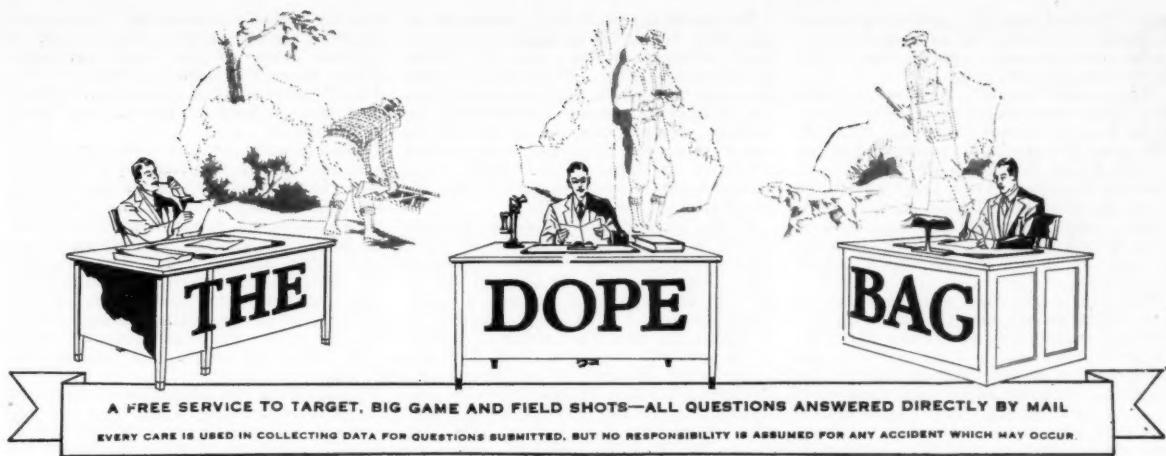
It is to be hoped that the United States will not again have need for military armament on a wholesale scale. But it may. And to put our manufacturers out of business through dubious and unenforceable laws, is hardly the part of logic.

### ALAMEDA POLICE ON HONOR LIST

The Alameda Police Revolver Club, of Alameda, California, has joined the ranks of One Hundred Per Cent Clubs. Captain John W. Strohm, U. S. A., retired, a distinguished pistol shot, is executive officer. The other officers are: M. S. O'Keefe, president; Jack Bailiff, vice-president; Captain Strohm, secretary; Floyd E. Drake, treasurer and Lloyd K. Wendland, publicity officer.

### PROBLEM NO. 2 PLATE II S.P.R.R.YARDS





### Conducted by F. C. Ness

#### THE UNIVERSAL APERTURE SPECTACLES

THE problem presented by blurred targets or indistinctly seen sights is a common trouble in shooting with metallic sights. Under certain conditions every shooter experiences this sighting difficulty. When eyes grow old they tend to become fixed in focus and when the power of accommodation decreases the difficulty of seeing sights and target increases. This is the constant problem of most shooters past 40 years of age. Not a few of them have been forced to give up the sport of rifle and pistol shooting because of their inability to see sights and target clearly.

Among other shooters afflicted with vision trouble, Henry P. Jones, M. E., has studied this problem for years. In developing his Universal Aperture Spectacles he has rendered a signal service to those shooters who are handicapped by "aged" eyes. Mr. Jones has achieved an improvement over other orthoptic gadgets because he has attacked the problem more thoroughly.

The Universal Aperture Spectacles consist of a spectacle-frame with an adjustable opaque shield clipped to either left or right lens holder according to which eye is used for sighting. The center of this shield is open. A movable disc is pivoted off-center on the stationary shield. The movable disc is pierced with a series of small apertures spaced at irregular intervals along the rim and at varying distances from the rim. These apertures may be aligned with the sighting eye in turn by revolving the movable disc around its axis. These selective positions of the aperture are necessary to accommodate changes in the angle of vision imposed by different shooting stances and positions. The sample offered four aperture positions; a sufficient choice to accommodate every angle of aim with rifle or pistol. Additional aperture positions can be provided when required by peculiar shooting stances.

In addition to the small apertures there is a large one. When this large opening is turned into position before the eye, the spectacles may be worn between strings or off the firing line without inconvenience. A small stud on the stationary shield engages holes in the rim of the movable disc to lock it for each aperture position. When it is required a lens may be used in the spectacle rim behind the shield.

**EDITOR'S NOTE:** While returning from a week-end shooting trip in West Virginia on May first, Mr. Ness was injured in an automobile accident. Mr. Ness' absence from the office will cause some delay in replying to Dope Bag letters, and it is hoped that correspondents will be patient until the unusually great accumulation of Dope Bag letters can be answered.

The Universal Aperture Spectacles without a lens will solve the problem of inadequate definition only excepting diseased or seriously crippled eyes. Old eyes again will be enabled to align metallic sights with the bull's eye. Some eyes of course need properly ground lenses for vision correction. No small part of Mr. Jones' service to vision-troubled shooters is the personal attention which he gives to individual problems. When the need of lenses is indicated that shooter is advised to consult his oculist, optometrist and optician.

When a shooter needs lenses the very best are none too good. An accurate diagnosis and prescription, the most nearly perfect glass obtainable and correct grinding are all important in getting a satisfactory shooting lens. The glass in itself introduces vision errors when the aim is outside of the optical center or when the line of aim is not parallel with the axis of the lens. A disadvantage of lenses in connection with orthoptic devices is that the glass reflects any light coming from the rear of the shooter. An important advantage of shooting lenses is the protection afforded the eye against gas, powder and tiny metal particles sent back into the face from a pierced primer, or a burst case head. With or without lenses, as the individual case demands, the Universal Aperture Spectacles are a satisfactory solution to an annoying problem.

#### THE N. R. A. JUNIOR 33

EXACTLY a year ago the N. R. A. Service Company featured a low priced, bolt-action, single shot, small bore rifle equipped with sling swivels and Lyman sights. This was a fairly good training rifle for junior marksmen, but it was not modern in that it was not adapted for the use of high velocity rim-fire ammunition.

Since that time the various makers have

brought out improved bolt-action single shot rifles designed to safely fire the different makes of high velocity .22 Long Rifle cartridges. These rifles were the Winchester Model 60, the Savage Model 3 and the Remington Model 33. These arms were accurate and very moderately priced, but they lacked sling equipment and suitable sights and needed some work on both stock and action to make them desirable for target training or small game shooting.

One of these rifles, the Remington Model 33, was remodeled by my friend E. H. Hoffman, who substituted a properly proportioned full length stock, refined the trigger pull and fitted a Malcolm No. 4 telescope sight. With Western Marksman and Winchester Staynless the average accuracy we obtained at 50 feet was  $\frac{5}{8}$  inch. As altered, this rifle made a satisfactory small game rifle for a man's use.

The Remington Arms Company has now brought out a special Model 33 with selected barrel, improved stock, target sights and shooting sling, making any remodeling unnecessary. This new rifle is called the N. R. A. Junior 33. It has been adopted by the National Rifle Association for the use of the N. R. A. Junior Rifle Corps. Many full-grown men are going to buy this completely equipped boys' rifle for their own use. It will be distributed exclusively through the N. R. A. Service Company. The price completely equipped is \$10.50 to N. R. A. members.

The N. R. A. Junior 33 has a well dimensioned one-piece walnut stock in "rubbed-oil" finish. The takedown and assembly of this arm is notably simple and easy. Barrel and action slip into the proper position in the stock at once, without any fiddling of the two parts, and they are firmly locked together by a slotted thumb screw in the bottom of the forestock. The gun is not of stingy dimensions. It weighs nearly 5 pounds; the over-all length is 41 $\frac{3}{4}$  inches, the barrel itself being 23 inches long from the muzzle to the receiver.

The 13 $\frac{3}{4}$  inch butt stock has a thick comb which extends 9 $\frac{1}{4}$  inches from the heel, plenty thick and long to afford a firm cheek support in the prone position. The drop from the 50-foot line of sight is 1 $\frac{1}{4}$  inches at the point of the comb and 2 $\frac{1}{2}$  inches at the heel. The pistol grip edge is 4 inches back of the trigger but the small of the grip has a circumference of 5 $\frac{3}{4}$  inches, and the curve is near enough to the trigger to afford a full

grip. The steel butt plate ( $4\frac{3}{8} \times 1\frac{3}{8}$  inches) is slightly concaved; the toe measures  $13\frac{3}{4}$  inches from the trigger and the heel is  $13\frac{3}{4}$  inches from the same point.

The grooved forestock also affords a secure grip, being almost square in shape and measuring  $1\frac{1}{4} \times 1\frac{1}{4}$  inches behind the sling eye. The front sling eye for the swivel hook of the  $\frac{3}{8}$ -inch leather sling is placed 12 inches forward of the trigger. For a lanky man in the prone position the left-hand reach is a bit short. Lengthening the butt stock with a  $\frac{3}{4}$ -inch rubber pad would make it better for a man. For a boy or small man it is long enough as is.

The bolt is very well made and finished (chromium plated) and the action is surprisingly smooth for a low priced rifle. The trigger is free of drag. The face of the bolt is recessed to encase the entire head of the cartridge, obviating any danger from burst rims. We did not get a bulge or puncture of any kind with several hundred high velocity cartridges of different makes fired in this rifle. The action ejects the fired case but it does not cock the striker, which must be pulled back with the fingers before each shot. This makes the arm a very safe one for a boy's use. The cocking knob is knurled against slipping and it draws back very smoothly. A red mark appears on the shank when cocked. This mark is turned out of view when the cocking piece is turned to the right into "safe" position.

The barrel is slotted at the muzzle and near the breech for standard dove tail barrel sights. The front slot is fitted with a Patridge type or thick square top blade for target shooting. The rear slot is filled with a slot-blank. A Lyman 42 receiver peep sight is fitted to the left side of the bridge. This sight has a target disc and is a great improvement over any open rear sight, but it has two minor faults. It is adjustable in both planes but not in minute of angle units and not by micrometer control. The elevation adjustment is locked with a lever and the windage adjustment requires a small screw driver. The most serious fault of this sight is its distance from the sighting eye.

The N. R. A. Junior 33 handles beautifully in the offhand position. It was a delight to use it from standing on small rocks and pebbles at 25 yards. On the target we shot offhand groups which scored from  $78 \times 100$  to  $84 \times 100$  when super-imposed on the official 50-foot target. As a zero check our standing score fired directly on this target with the sights adjusted for the prone position was  $75 \times 100$ .

Sitting at 75 feet, we got 1-inch groups with Super X,  $\frac{3}{8}$ -inch groups with Palma Hi-Speed and  $\frac{1}{2}$ -inch groups with Winchester Staynless. None of the target cartridges loaded with Lesmok powder were tried. Using the factory sling and factory sight's at 50 feet from the prone position we got  $\frac{5}{8}$ -inch groups with Palma Hi-Speed and Super X and  $\frac{1}{2}$ -inch groups with Winchester Staynless. The shooting was done on a misty evening under low hung clouds in a deep gorge of the Middle Mountain range in West Virginia. The light was very poor indeed and only a telescope sight could have brought out the real grouping ability of the arm. A shoulder injury and the nearness of press time precluded subsequent tests with target ammunition under better light conditions.

Even under the adverse light condition every shot with Winchester Staynless cut or touched a .227-inch circle, or one very slightly larger than  $\frac{1}{4}$ -inch in diameter. This particular barrel indicated preference for Winchester Staynless ammunition, lot number 89-20. Another barrel would probably do its best with another brand of ammunition.

The barrels for the N. R. A. Junior 33 are selected by test at the Remington factory to insure adequate accuracy for the Junior Qualification Matches. The thing to do with any small bore rifle is to try from rest position every brand and lot of ammunition obtainable. The particular lot which gives the best 50-shot string of groups should be then purchased in quantity and each carton marked with the serial number of the rifle for which it has been selected.

To give some idea of the grouping ability of the N. R. A. Junior 33 the restocked scope equipped Model 33 rifle (mentioned before) may be used as a criterion because this rifle has indicated a degree of accuracy practically equal to that of the sample N. R. A. Junior 33. In a direct target comparison of this rifle with the sample N. R. A. Junior 33 the latter averaged 0.7-inch groups and the former 0.8-inch groups with the same ammunition, which included Lesmok and smokeless brands. As a further direct comparison Mr. Hoffman fired both rifles from prone at 50 feet and got a  $\frac{5}{8}$ -inch group (20 shots) with each, using Staynless in the scope sighted Model 33 and the Marksman in the sample N. R. A. Junior 33. The 50-yard shooting was done only with the scope sighted rifle. The results are given in the appended table.

#### 50 YARDS PRONE M. & E. REST

(5 targets used to avoid change in position)	Groups	Elevation
Cartridge		
Palma Hi-Speed.....	0.81 inch.....	Centered
200-Yd. Precision.....	1.00 inch.....	1" below center
Kleanbore H. P.....	1.18 inch.....	1" below center
Western Marksman.....	1.37 inch.....	1\frac{1}{2}" below center
Super X H. P.....	2.25 inch.....	Centered

### THE BROWNING LIGHT WEIGHT SUPERPOSED 12 GAUGE

The general features of the Browning Superposed design were published in THE AMERICAN RIFLEMAN for January, 1932. The new upland model weighs  $6\frac{1}{2}$  pounds with  $27\frac{1}{2}$ -inch barrels and has a solid concaved sighting rib. The sample is a standard grade gun with "Type F" stock of imported walnut, and "Twin Single Trigger." The stock is fairly straight ( $1\frac{5}{8} \times 2\frac{1}{4} \times 13\frac{3}{8}$  inches) and has practically no pitch. Without pitch it should shoot a few inches high at short range, which is a desirable feature in a gun intended for rising birds in the brush.

The frame appears short and block-like in side view, and the dead black finish forms an effective background for the attractive engraving which ornaments the receiver and other breech parts. The fore-end release for dismounting is noteworthy. The latch is pushed back towards the receiver to free the long take down lever. When the lever has been swung clear the fore-end is shoved straight forward,  $\frac{3}{4}$  inch, and left attached to the barrels.

The Browning Superposed is a very attractive gun. To see it is to admire it, and to hold a borrowed one is to covet it. When handling this light weight model one is impressed by the ready response of the weapon to every whim of the wielder. Light, buoyant, and alive, yet always under control, it is an example of perfectly distributed weight and bulk. What a companion for the hills and thickets! This is one gun I shall regret returning to the consignor.

In the recoil test I wore a thin sweater over a thinner shirt and fired one box of trap loads through the lower barrel. Target after target was smashed without a miss until a tricky wind came up to break the string. Each flier from the very first was completely demolished, that puff of black dust which

means a perfectly centered hit. I was conscious of the kick against cheek as well as shoulder before 25 shots had been fired. Before trying it on doubles a thick coat was donned. Even so I had enough after 50 shots fired in an attempt to discover any latent kicking ability.

The equipment used was a pile of small tin cans and cartridges conveniently near, at my feet. The method of operation was to stoop for two cans and two cartridges, load both barrels and toss both cans straight out shoulder high. Doubles were regularly made at 8 to 12 yards from the muzzle in this fashion. The first of the pair of targets would be taken from 3 to 5 feet above the ground and the second a foot or two nearer the earth. This is a real test for an upland double gun, especially when continued in rapid sequence for 50 shots.

I balked the rear trigger once. That was the only malfunction, except that the gun opened with difficulty as it became heated. Near the end of the 50-shot string I could not open it without greater leverage than the fore-end grip afforded, and then I burned my left hand on the barrels. I was kicked plenty by that time, through the thick rough serge dress coat.

I would say that this  $6\frac{1}{2}$  pound Browning Superposed kicks as much as my side-by-side double, which also weighs  $6\frac{1}{2}$  pounds when stripped of its recoil pad and cheek pad. The discomfort caused by both guns is similar but the disturbance to the aim is less in the case of the superposed gun. Neither gives any appreciable recoil when fired in a more normal way, as in hunting, where a gun is fired at more or less widely separated intervals.

### The Superposed Model "S" Gun Case

The rectangular, hinged cover gun case of machine-grained black cowhide which accompanied the Browning Superposed is nearly as handsome as the gun.

The case body is made of 3-ply basswood. Rigid walled compartments fit the dismounted parts of the Browning Superposed gun very snugly and buckled leather straps hold barrels and butt portion securely to their places. An extra compartment is available for cleaning equipment. The interior is lined with a felt-like fabric in dark gray.

The case stands about 8 inches high and is about 2 inches longer than the barrels of the gun for which it is intended. A rain and dust flange, over which the cover fits snugly, provides a weather seal. On both ends, the spring latches may be locked with a key. A third snap lock in the middle helps to keep the case tightly and evenly closed. A solid hand sewed leather handle provides convenient carrying as the total thickness of the case is  $3\frac{3}{4}$  inches. The case is strongly constructed, including steel corner reinforcements inside. It is an effective form of gun insurance.

### THE AUTOMATIC PORTABLE TARGET FRAME

Every shooter who has been annoyed by searching for materials to build an impromptu target butt has determined to devise a portable target holder. For years I used a burlap bag with two pegs and a cross piece for the purpose. X-Ring Products have solved the problem for those who have a car and a rifle but lack a regular target range. Their metal target frame occupies a space  $22'' \times 18'' \times 2''$  in the car, and its shape makes it easily portable over the usual short distance from the car to the spot selected. It weighs 25 pounds. It can be set up in less than a minute according to my timing with the sample, and once

set up three 100-yard targets are available to the lone shooter at the firing point and without changing his position.

The Automatic Portable Target Frame is strongly constructed, as it is designed for life time service. The metal body and trip plate are of steel 13/16 inch thick. The three detachable legs are 3/8 inch solid rods a foot long. The legs and trip plate are locked to the folded frame with a single thumb screw. Three target carriers hold wall board sheets large enough to accommodate the 100 yard small bore target. Thumb tacks hold the target paper securely and evenly against the wall board. Each sheet of wall board is fastened in its carrier socket with screw bolts and is readily replaced when a new sheet is needed.

When set up the first target alone faces the shooter. All the mechanism and the heavy (coil) main spring are protected from the line of fire by the heavy steel plates of the frame. For pistol shooting the rear legs are pushed into the ground until the protecting frame is on a plane with the line of fire. The width and weight and moderate height makes the outfit very stable even in a strong wind. When a group or score has been completed on the first target a bullet is directed against the 7"x7" heavy metal trip plate and the second target replaces the first. The third target is similarly brought into vertical position when it is wanted.

The three target carriers revolve on the same rod and all three are connected with the main spring, the tension tending to pull them backward and down. Each in turn is held in vertical position by a trip latch, the trip plate being an auxiliary part of the trigger. The trip latch is equipped with a stop collar which may be adjusted for wear or for sensitiveness by loosening a square headed set screw. At 50 yards the mechanism worked perfectly under the varying blows of .22 Short, .22 Long Rifle and high velocity rim fire cartridges. When center fire rifle ammunition is used on the target a .22 caliber pistol or rifle also should be carried for use on the trip plate.

The advantage of having three targets is obvious to the lone experimental shooter. For the match shooter it eliminates confusion because only one target is in view at any time. Any one who has spent half an hour or more erecting a temporary target and several minutes more changing targets can appreciate the value of a device like this. After viewing the sample I cannot help observing the great value offered at the quoted price of the Automatic Portable Target Frame.

## QUESTIONS AND ANSWERS

### CROW SHOOTING WITH THE .22

**I**N THE near future I am going to do some crow shooting; a number of my shots will be at 100 or 200 yards at crows perched in trees 40 to 60 feet from the ground. Now on paper, using 1/4-inch for 1 yard, I have found that it is only about 1 yard farther from the riflemen to the top of a 16-yard tree than to the base, at 128 yards distance. It is 2 yards farther at 64 yards. This is not very much, but it is on the end where the bullet does most of its falling in its trajectory. Also it is shooting "uphill," and I believe this will cause the bullet to strike little low, perhaps not very much, but both together might make an inch, and I won't have any inches to spare at those distances.

Several times after shooting prone at 25 yards on targets, I have shot the standing position, and the bullet always seemed to strike about 3/16 inch higher, which I laid to

the gun being about 4 feet higher in the standing position than in the prone; and if this is true, a man standing on a 48-foot platform and shooting 150 yards would shoot 1 1/4 inches high. Is that right? Will you please give me some idea of the difference in shooting "uphill" and "downhill" as compared to shooting on level ground, with the .22-caliber rifle?—R.L.H.

**Answer:** I think I can give you some information that will be of help to you when shooting at crows with a .22-caliber rifle. But I can give you little which will make you successful in hitting crows at between 100 and 200 yards with a rifle using that cartridge, because no one can hit crows at those ranges with such a rifle except by sheer luck, as you will see below.

In the first place, the regular .22 long-rifle cartridge, when fired from a rifle, has an extreme range of 1,400 yards, and the Hi-speed cartridges probably about 1,600 to 1,700 yards, when the barrel is elevated at an angle of 20 to 30 degrees. At these extreme ranges, the bullet is fully capable of penetrating a man's skull if it hits it squarely. Therefore, you should not shoot at crows and squirrels in trees unless you know that your bullet will come to rest where it will do no harm.

As flat trajectory and fine accuracy are extremely important in crow shooting, we will assume that you are using the best rifle, sights and ammunition which it is possible to obtain—namely, a Winchester Model 52 rifle that has been found to be particularly accurate, with Remington Palma Hi-speed ammunition, and that the rifle is sighted with a 6-power Fecker telescope sight. As compared with this rifle, the ordinary little .22-caliber repeater is only about 25 per cent efficient.

If you pluck off the feathers of a crow, you will be surprised to find how small its body is. It really presents a target that can be likened to nothing larger than a 3-inch bull's-eye. The above rifle and ammunition can be just about relied upon to keep their bullets in a 3-inch bull's-eye at 140 yards. This does not mean that one can surely hit crows at 140 yards—far from it—because to hit a 3-inch bull at that range, the distance and sight adjustment must be known accurately, and they never are in hunting. It is this matter of not knowing the distance and sight adjustment accurately enough which makes it impossible to hit crows except by luck at ranges of from 100 to 200 yards.

The .22 Remington Palma Hi-speed long-rifle bullet drops as follows between various ranges:

From 50 to 75 yards, drop is 2.25 inches.  
From 75 to 100 yards, drop is 3.00 inches.  
From 100 to 125 yards, drop is 4.38 inches.  
From 125 to 150 yards, drop is 5.25 inches.  
From 150 to 175 yards, drop is 6.12 inches.  
From 175 to 200 yards, drop is 8.00 inches.

I have never yet seen a man who would not continually make errors of 25 yards or more in estimating ranges between 100 and 200 yards. The average error, if only 10 yards, is enough to cause a complete miss on a crow at 100 to 200 yards. A careful analysis of this table will show you quite conclusively that with the best rifle, sights, and ammunition, if you hit a crow at a range of over about 90 yards, it will be due more to good luck than to good shooting and close calculation.

You are probably about right in your estimate of how shooting into the air affects the flight of the bullet. The bullet travels slightly farther when shooting uphill than when shoot-

ing on a level, and the bullet has a longer time to be affected by gravity, but the difference is so very slight that one would never notice it. Suppose at 125 yards, the slant range is 2 yards farther. That means a quarter-inch drop of the bullet. But if you shoot 10 shots at 125 yards, you will see that the distance from the top bullet to the bottom bullet will be at least 2 1/4 inches. That is the error of the rifle and the ammunition is ten times as great as the error due to firing at a crow in a tree. It therefore does not pay to figure on the effect of shooting at a crow in a tree as compared with one on level ground.

Assuming that you are using the Remington Palma Hi-speed cartridge and a 'scope sight, I think you will get the best results by sighting in your rifle at 75 yards, so that at that distance your group will center 1/2-inch above the intersection of the cross-hairs on the target. Then, with the rifle sighted in that way, shoot groups at 50, 100, and 125 yards, and note where the group falls with respect to the point of aim. On these targets, draw 3-inch circles to represent the body of a crow. This will be very instructive, and you will find out just about where you should hold on a crow at any estimated distance to stand the best chance of hitting it.

## OFFICIAL POLICE AND OFFICERS' MODEL

**I** AM going to buy a .38-caliber Colt for target purposes and general service. Would you kindly compare the Officers' Model and the Official Police and give the advantages and disadvantages of both?—M.L.K.

**Answer:** The Officers' Model Colt and the Official Police are both built on exactly the same frame, therefore they have the same weight, balance, feel, etc., but the Official Police has fixed sights and the Officers' Model has adjustable target sights. The Officers' Model also is especially fitted up for target shooting by having the back strap checked and the trigger pull especially hand-finished.

This extra work on the Officers' Model results in an additional cost of \$10.75, as the Official Police costs \$30 retail and the Officers' Model \$40.75.

The Officers' Model can also be obtained in 7 1/2-inch barrel, which is an advantage for long-range shooting, and enables finer sighting to be done at long ranges.

The additional cost of the Officers' Model is well worth while if you are going out for serious target work, as it is a great advantage to be able to adjust the sights to bring your point of aim out at the bottom of the bulls-eye.

On the other hand, for general service and target practice at one particular range, practically as good work can be done with the Official Police, because with a certain amount of trouble the fixed sights of this gun can be either filed down or bent over, or whatever else is necessary to make the gun target right where you want to hold it at any one range, and in fact the sighting is so close that frequently this gun will need no change in the sights whatever for the 25-yard distance.

These guns are all made the same and all shoot just the same, but the individual shooter varies in his hold so that it is usually the fault of the shooter and not the gun if the gun does not target correctly; but there is so much variation between different men's holds that it is very well worth while to get the model with adjustable sights if you can afford it.

## THE 95 WINCHESTER AND MODERN .30-06 AMMUNITION

BECAUSE I am a bug on guns and ammunition, and velocities and energy, etc., I am writing to know if what I have will be of any interest to you.

I have in my possession an 1895 Winchester, bored for the .30-06 Government ammunition. This gun is comparatively new, having had between 300 and 500 rounds shot in it. Last year the owner attempted to shoot a coyote, and the gun blew up. The plates by which the frame is bolted to the stock were sheared off clean. The frame was bulged outward. Almost the entire back end of the shell was blown out. Fortunately the bolt did not entirely give way and remained fastened.

The victim was Jno. J. Shults, a California state vermin trapper. His only injury was a powder burn of his left eye. (He shoots left-handed.) He was 54 years old, and a seasoned trapper.—G.R.F.

**Answer:** I am not at all surprised at the accident that occurred to Mr. Shults with the .30-06 Winchester Model 95 rifle. It is about what would be expected sooner or later to one using one of these rifles today and not completely understanding its weakness.

The Winchester Model 95 rifle was adapted to use the .30-06 cartridge at a time when the only cartridges of this size on the market were those loaded with 150-grain bullet and giving a muzzle velocity of 2,700 feet per second, and those loaded with a 220-grain bullet and giving m.v. 2,200 f.s. These cartridges did not give breech pressures in excess of 46,000 to 48,000 pounds per square inch. A Winchester Model 95 rifle is safe with such cartridges.

Following the World War, all of our cartridge companies placed very much heavier loaded .30-06 cartridges on the market in response to the popular demand, these cartridges being intended only for use in Springfield, Winchester, and Remington *bolt-action* rifles which have receiver and bolt constructed of *properly heat-treated alloy steel*, and have two large locking lugs at the head of the bolt. These cartridges have bullets and velocities as follows:

110-grain bullet	M. V. 3,500 f.s.
150-grain bullet	M. V. 3,000 f.s.
180-grain bullet	M. V. 2,700 f.s.
220-grain bullet	M. V. 2,450 f.s.

The breech pressures run from 52,000 to 56,000 pounds at a normal temperature of 70 degrees; but when the cartridge has been exposed for a short time to a temperature of say 100 degrees on a hot summer day, these pressures may rise 10,000 pounds or so. Despite these high pressures, these cartridges are entirely safe in normal Springfield, Winchester, and Remington *bolt-action rifles* which have been made since the World War. No doubt Mr. Shults used one of these cartridges, for scarcely any of the older ammunition is now seen.

These new heavily loaded cartridges that began to appear on the market from 1920 to 1924 proved too heavy for the Winchester Model 95 rifle. The rifle was dangerous for them. Therefore in 1925, when the Winchester Repeating Arms Company placed on the market their Model 54 bolt-action rifle in .30-06 caliber, which was perfectly safe with these cartridges, they discontinued the manufacture of their Model 95 rifle in .30-06 caliber, and have not made it since.

Those having these rifles should now use them only with the .30-06 ammunition made by the Winchester Repeating Arms Company and loaded with 150-grain bullet, M. V. 2,700 f.s. The pressure of this cartridge is low, and

it is safe in Model 95 rifles that are in first-class condition, that have not developed excessive headspace, and that have not had the finger lever catch filed to make them operate easier.

## HOLLOW POINTS IN THE .25 COLT AUTOMATIC

I HAVE long been a reader of your articles, both in the AMERICAN RIFLEMAN and in other sporting magazines. Although I don't profess to know a great deal about firearms, etc., I will say that I have handled a good many kinds since I was heavy enough to hold a .22 rifle to my shoulder.

I have recently become greatly interested in pistols and revolvers more than in any other firearms, and have tried to pick an ideal small gun for self-protection. Of course we all do that at some time or other, but what I decided on is something that I have never seen discussed or written about in any sporting magazine.

Why isn't the little .25-caliber colt automatic more popular?—mainly because it hasn't the shocking power necessary to do the trick. Anyone will admit, though, that it has plenty of penetration. Why not take some of the penetration and make it shocking power, as we have with the .22 hollow point? In other words, make it a hollow point.

I have done this. First I drilled a hole  $\frac{3}{16}$ " deep and  $\frac{1}{16}$ " in diameter in a few bullets. I tried some of these in wood and they didn't work worth a cent.

I was about disgusted with the little pea shooter; and then, on closer examination, I saw that apparently the wood had pinched the hollow point instead of expanding it. After that I tried to find something that would be more like real flesh, and finally decided that perhaps magazines would work better, as I did not have any tallow or paraffin such as I had read would be very nearly the same as flesh.

I shot all the rest of my improvised hollow points into these magazines; and believe me, if those little pills will do anything like the same to human flesh I don't want more than a couple of them planted in me. These little bullets averaged about 4 inches penetration, and sure tore an awful hole. They were just about perfect in their expansion, too, and I believe if the bullets had been machine made with hollow points they would have done a great deal better.

I am inviting comment on this little .25, and would like very much to see this published. Maybe I am all wrong in trying to make a Big Bertha out of the little one, and if so, would sure appreciate someone telling me why, for, and wherein.—J.A.W.

**Answer:** I think the reason for the lack of popularity of the .25 Colt cartridge is because the only pistol made for it is a little "lady's pocket weapon" that no one could shoot with any degree of accuracy. At its best, the .25 Colt cartridge can be nothing but a target and small-game cartridge, because it cannot be made to have real stopping power. For target shooting, it cannot compare with the .22 long-rifle cartridge in accuracy. That leaves its only real usage for small-game shooting. Small game presents a small target, and very fine accuracy is essential. To obtain fine accuracy in a handgun, we must have at least a 5-inch barrel, preferably 6 inches; must have at least 7 inches between sights; must have adjustable sights, and must have a trigger pull

without any suspicion of creep in it. No such weapon is made for the .25 Colt cartridge.

The penetration or mushrooming of bullets in wood or magazines is no indication of the performance of bullets in animal tissue. Soft-point or hollow-point bullets will not mushroom efficiently in animal tissue unless the muzzle velocity exceeds about 1,200 f.s. No such velocity can be obtained with the .25 Colt cartridge. The only exception to this rule is the hollow-point bullets of the .22 long-rifle cartridge, which have such large cavities that they are mere shells. These bullets, even at m.v. 1,050 f.s., will mushroom on small game, but they lack the penetration necessary to give good stopping power on larger game or human beings. This is the reason why you see so few revolver or pistol cartridges with soft-point bullets—the soft points won't mushroom. The shocking power of a pistol cartridge depends on the diameter and weight of its bullet, and the muzzle velocity, and scarcely at all on the construction.

I think these are some of the reasons why the .25 Colt is not more popular among well-informed pistol shooters. It has a very large sale to the general public.

## SOME ADAPTATIONS FOR THE HORNET CARTRIDGE

SINCE our last correspondence regarding the .22 Hornet, I have done a couple more jobs that worked out well with this caliber, and thought you might be interested.

First, I got a heavy barrel from Niedner; that is, a blank, as they called it, just bored and rifled. I chambered it and fitted it to my old Model 52 Stevens with a No. 44½ action. Also remodeled a No. 44 Stevens action and barrel for this cartridge with good results. But the easiest job to do, and one of the best, is a Krag rebarreled with a .22 barrel. All that is necessary with the Krag action is to set the barrel back far enough in the receiver so there is no headspace between the rear end of the barrel and the front end of the bolt. Then chamber to let the head of the cartridge into the barrel, with just enough sticking out for the bolt to squeeze down on—not more than .002 to .003 inch. As for the bolt, the only alteration necessary is to lengthen the extractor by welding a longer tip on it. It extracts nicely and positively, and the Krag bolt holds the cartridge firmly enough so that I have had no instance of swelled cases, even though I use 12 grains of No. 1204 all the time in this gun.

I think I told you in a previous letter that I was using the old Winchester Musket, originally chambered for the .22 short, for my experiments with this caliber. Was fortunate in getting several of these pretty cheap, and the slow twist in these barrels seems to be just the thing for this caliber, for they are extremely accurate. Naturally, we didn't expect them to last very long with the high-speed and jacketed bullets, but the original one has now had about 1,200 rounds through it, and looks as good, if not better, than ever.

I really believe that until someone comes out with an action designed for this cartridge, the Krag is the best bet, so far. Haven't yet tried to make it repeat, but think I can without too much work.—J.B.S.

**Answer:** I am obliged to you for your letter on rifles for the Hornet cartridge. This is very helpful.

One thing I do believe, and that is that you had better stop using that charge of

12 grains of No. 1204 powder. All our experiments here in the East show that it gives very excessive pressure and is not as accurate as the standard charge of 11 grains.

### REMOVING PITS FROM SHOTGUN BARREL

HOW can I remove rust spots of long standing from the barrel of a shotgun? I've tried a Marble Cleaner without success.—J.R.S.

**Answer:** Take a plug and screw it on to the end of your cleaning rod. Have the plug fit loosely enough so that you can give it a couple of wrappings of emery cloth. Use a coarse cloth first, then a fine cloth to finish with. Work in and out, straight into the choke and back, not in the choke. If that doesn't take your pits out they are pretty deep, and the barrel will have to be reborod. Send it to Ithaca Gun Company, Ithaca, N.Y., and let them reborod, which will enlarge the bore about five thousandths of an inch, but won't interfere with the way the gun shoots. Not being able to get the pits out with Marble Cleaner or with emery cloth, the only chance is to reborod.

### A MODERATE-PRICED CHUCK OUTFIT

I LIVE on a farm and do a good bit of chuck hunting in the summer time, which I have been doing with a .25-20 Savage Sporter, with open sights, using both soft-point and high-speed hollow-point shells. At close ranges I get good results with these shells, especially the hollow-point, but the chuck beyond 100 yards is pretty safe.

I am going to get a .25-caliber rifle that has a flatter trajectory than the .25-20, but it will have to be the best rifle possible for the smallest amount of money because my finances are very limited. What do you think of the .250-3,000 Savage Super-Sporter for woodchucks? And what about its accuracy compared with the .25 Remington, bolt-action? Will the barrel of the .250-3,000 stand up under this high velocity?

I have never used a telescope sight but I believe I can learn to use one. How about the Lyman 438 field telescope sight on the .250-3,000 Savage Super-Shooter Model 40, for woodchucks? Could a good shot kill fairly regularly with it at 200 to 300 yards? If the Lyman 438 field telescope sight will not do for this rifle, how about the Lyman 5-A sight?—E.S.C.

**Answer:** I should say that so far as chuck shooting was concerned, a .25-20 Savage Sporter with open sights was about a 60-yard rifle, with Lyman sights about a 75-yard rifle, and with a Lyman No. 438 telescope, it would be satisfactory to about 150 yards. A good telescope sight is of an enormous advantage in woodchuck shooting or in shooting at small game. I would rather have a very mediocre rifle with a telescope sight on it than the finest rifle in the world without one. You can very greatly increase the distance—at which you can now surely hit chucks by placing a Lyman No. 438 sight and a Rowley cheek pad on your .25-20 Savage.

A .250-3,000 Savage Sporter with a Lyman No. 438 telescope, using Western

ammunition with 100-grain open-point bullet, will probably average about 3 to 4-inch groups at 100 yards. Some rifles and some lots of ammunition will average a little closer. This really means that 100 yards is about the limit at which you can surely hit woodchucks. As a matter of fact, the Savage Super-Sporter does a little bit better than this in actual practice. It is about a 150-yard sure bet for woodchucks with a telescope sight on it, and occasionally you do make shots at much longer range.

### AMMUNITION COMPONENTS FOR AN OLD REMINGTON CAP AND BALL

I HAVE a Remington cap and ball six gun, dated 1858, in excellent condition, but have been unable to secure caps or powder for it, and thought you might be able to help me. I should like to know where I can purchase:

Percussion caps; FFFG fine-grained powder; a bullet mould, caliber .44; a powder measure; a wad cutter, caliber .44.

I have the gun, plenty of lead, and a desire to try the gun out against some of the modern firearms, but nothing else. My father carried this gun across the plains in 1873, and he says it is the finest shooting iron he ever had. From the appearance of the grooves and lands, it is as good as new. I will appreciate anything you can tell me about securing ammunition.—B.S.S.

**Answer:** Percussion caps are still made by all of the cartridge companies, and can be obtained for you by sporting goods dealers

The FFFG black powder can generally be purchased from sporting goods dealers or obtained by them, but if you have any trouble getting this powder locally, you can purchase it from the du Pont station or magazine which is located at Vigorit, Calif.

As for bullet moulds, there is a special bullet mould for these old guns made by the Lyman Gun Sight Corp., Middlefield, Conn., known as Ideal No. 450,225. This bullet mould is sold by the Lyman Corporation for \$3.50.

You can also get a wad cutter for \$1 from the same company. You should get this wad cutter of .45 caliber. These old .44-caliber guns are actually .452 in diameter, and whereas they are called .44 they are really .45 as far as the diameter of the chamber is concerned.

If you do not want to purchase a wad cutter, you can probably use an old .45-caliber shell as a makeshift to cut the wads.

### A RELOADING HINT WORTH TRYING

IN a back issue of THE AMERICAN RIFLEMAN I notice a discussion by Colonel Whelen on the action of mercury fulminate on brass rifle shells, so I wish to tell of a solution that I used in 1906-1907 when shooting with the Yale Rifle Club, using Springfield fields.

We reloaded our own shells, bought from the Frankfort Arsenal, using Winchester primers (corrosive primers). The shells would split on the second firing, so we asked a chemical professor about it, and he advised using a solution of iodine and alcohol. The idea, as I remember it, was that the iodine combined with the mercury. Well, it surely worked, for we reloaded the shells eight and ten times, provided we dropped the hot shell immediately into the solution. Also one

could detect the difference in the "springy" feel of the doped shell against the stiff feel of the undoped one.

I am giving this from memory and for what it is worth—anything to help the shooting game.—H.S.

**Answer:** We are very much obliged to you for your letter describing a method of solution of the problem of brittle cartridge cases due to fulminate primers. I have never heard of this method before, and I fear that I am not enough of a metallurgist to know whether it will work or not. But I am going to pass it on to Mr. Hathaway and ask him to publish it. In that case, many of our members will undoubtedly try it, and in a few months we will know whether it will work or not. If it does, I am sure that riflemen will be very much indebted to you for the suggestion.

### POWDERS AND LOADS IN THE .30-06

IN ORDER that I may afford more target shooting I would like to substitute Pyro D. G. for the du Pont powders I am now using if possible to do so, and if it will give me equally as good results in my .30-06 Sporter U. S. Springfield.

Please give me the weight of charges of Pyro D. G. that will about duplicate the following loads:

48 grains No. 15½ and 220-grain soft-nose flat-base bullet—jacketed.

53 grains No. 1147 and 180-grain open-point flat-base bullet—jacketed.

52 grains No. 17½ and 80-grain Winchester open-point superspeed—jacketed.

Also, if Pyro D. G. will work well behind Ideal gas check bullets No. 308334 of 194 grains and 311413 of 169 grains. What is the proper charge for each to get the highest velocity permissible with bullets cast of hard bullet metal? At present I am using 29 grains of 17½ behind the No. 308334 bullet, and it is very accurate. If I can shoot it a little faster with Pyro D. G. I will like it better yet.—C.H.E.

**Answer:** Your 220-grain load is giving you about 2,300 f. s. in the .30-06 and your 180-grain load about 2,600, while your 80-grain load is giving about 2,900 f. s. You could not fully equal the former two velocities with Pyro D. G. powder. The maximum load with Pyro D. G. behind the 220-grain bullet would be 42.0 grains weight, giving about 2,100 f. s.; behind the 180-grain bullet the maximum charge would be 44.0 grains weight, giving about 2,400 f. s. Behind the 80-grain .32-20 bullet in the .30-06 case you would use 50.0 grains weight Pyro D. G. powder, which would give about 3,000 f. s. muzzle velocity.

Your 29-grain charge of No. 17½ powder between Ideal Bullet No. 308334 cast hard might safely be increased to 33 grains, which would give 1,875 f. s. In Pyro D. G. behind this bullet I would suggest starting with a charge of 30.0 grains weight, which could probably be worked up to 36.0 grains weight without developing fusing or stripping trouble.

### THE MODEL 1906 WINCHESTER IS NOT A TARGET RIFLE

I HAVE a .22 Winchester model 1906. It has a 20-inch barrel. Will you kindly tell me what you think of that gun for target practice?—W.K.

**Answer:** The .22 caliber slide-action Model 1906 Winchester rifle is a fine little plinking

rifle suitable for informal target practice. It is neither properly stocked nor accurate enough for real competitive target work. In target work of the formal kind there are certain exacting requirements in the equipment. The gun must be properly stocked, sighted and sling equipped, besides having adequate accuracy. A full-size buttstock with shotgun-type butt plate and a comb high enough and placed forward to adequately support the cheek is required, as well as a good solid, hand-filling forestock, to furnish a gripping place for the left hand. Preferably the small of the grip should be of the pistol type to give adequate support for the trigger hand. The sights should be of the peep variety with the rear chamber as near the eye as possible, and this sight should be adjustable to minutes of angle in both windage and elevation. The front sight should be an easily seen and well-defined post or blade with a flat top for an elevation guide, and straight sides for positive windage guide in accurate holding. Last but not least, the gun should be equipped to take a shooting sling.

Your Winchester Model 1906 does not have any of these requirements, excellent as it is for informal shooting of the small-game and plinking variety at short ranges. About the least suitable rifle for normal target practice is the Stevens single-shot Model 414, or Armory Model, fitted with a sling strap and either the Lyman 42 receiver sight, or preferably the Lyman 103 micrometer tang sight. In magazine arms perhaps the best moderately-priced rifle for this purpose would be the Model 1919 N. R. A. Savage equipped with sling strap and the Lyman 48-G receiver sight. If the marksman is interested in telescope sights, the Model 57 Winchester rifle would be suitable, as it is excellently accurate and the telescope would add to its rather light weight of 5 pounds. The standard weight of the Savage N. R. A. Model is 7 pounds. These three rifles should be used with the .22 long-rifle cartridge exclusively.

#### MONTE CARLO COMBS; POWERS CHEEK REST

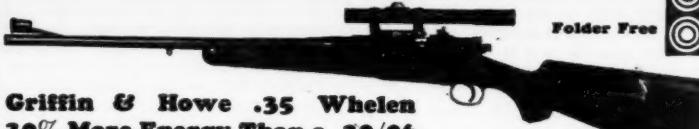
THANK you for your reply advising the Monte Carlo comb. Looks all right to me, but where and how do I get it? You mentioned the Powers cheek rest in your book. Just where can it be had?—J.W.W.

**Answer:** The Monte Carlo comb is made by most gunmakers to order. Mine were made by the Ithaca Gun Company and by the Browning Arms Company, both with cheek-piece, and the latter is not necessarily included with the Monte Carlo comb. Probably any of the double gunmakers as well as others would make the Monte Carlo comb, and it is likely that any of the pump gunmakers would furnish such a stock as well.

The Powers check rest is the idea of Chan Powers, once a great shot both at game and at the trap. He got a stock with a high, full-rounded trap comb, a comb that he knew was too high for him, say 1 1/8 inch. Then he took a rasp and sandpaper and cut down this comb, hollowing it out, until it exactly fitted his cheek, and gave him precisely the elevation he wanted. Of course Powers did this work himself, so not many gunsmiths knew about it. I have followed Chan Powers and have a number of guns into which this cheek rest has been cut. You can do it, or you can go to a gunsmith and watch him do it, standing over him so as to stop him when the gun gets right. First, start in with a comb that is too high, heavily rounded, for the comb is going to be thinned and lowered in the process. Then begin the cut right down into the

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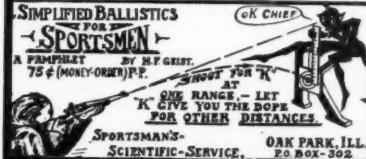
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comb, which will be hollowed out and at the same time flattened. The cheek rest ought to be a little longer than the face is broad because the cheek in twisting this way and that, will not always fit precisely the same place. Hence the Monte Carlo comb to keep elevations even, and hence the rest a bit wider than the face.

#### ILLINOIS IZAAK WALTON MATCHES (Continued from page 40)

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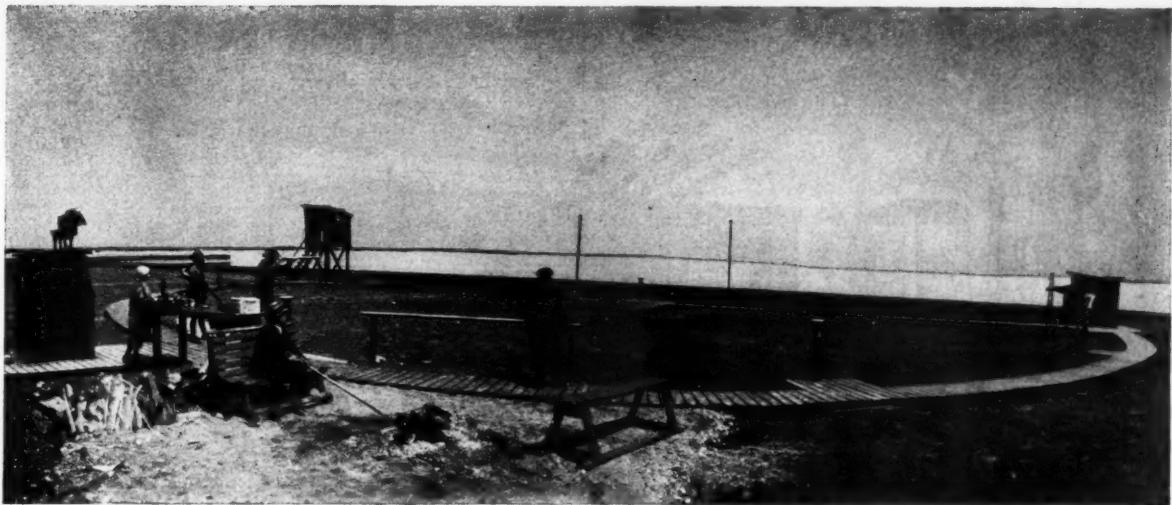
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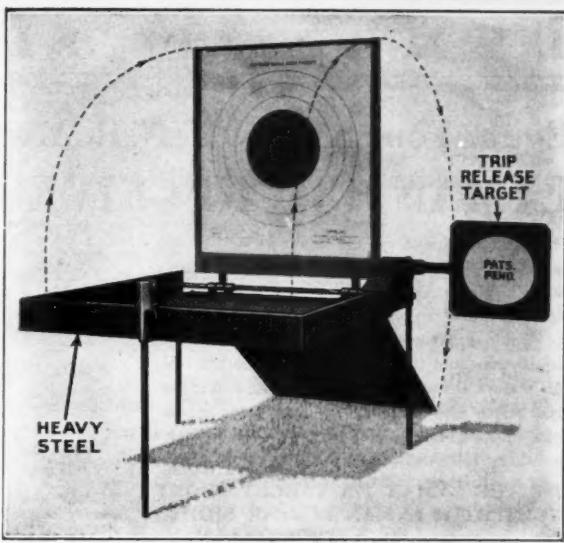
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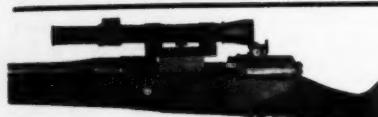
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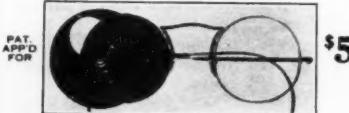
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Made in .22 Short, .22 Long, .22 Long Rifle and .22 W.R.F. sizes—with solid or hollow-point bullets.

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# WOULD YOU PAY \$1,000 FOR THIS GUN?

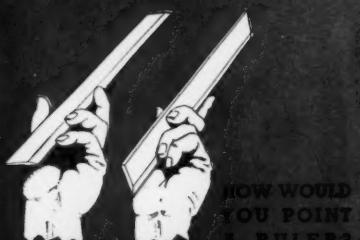
REMINGTON  
UMC



When barrels are solidly joined, if the heated barrel starts to expand, the cooler barrel holds back, refuses to stretch—both barrels buckle. In this bay-of-war neither barrel holds back the shooter loses.



A sleeve at the muzzle of Model 32 permits either barrel to expand or contract freely without resistance from the other—barrels always straight. Air-space between keeps barrels cool.



HOW WOULD  
YOU POINT  
A RULER?

You'd sight along the narrow edge, of course, but with the ordinary double gun you must sight along the flat side. The Remington Over-Under gives you the narrow line of

Sportsmen who can afford it pay from \$500 to \$1500 for European over-and-under guns.

Now you can buy a better over-and-under gun than these high priced foreign ones for the price of an ordinary double gun. It is the new Model 32 Remington.

The Model 32 gives you two barrels with all the advantages of a single barrel—narrow sighting plane for straighter aiming; barrels in the line of sight instead of on each side of it; control firmly in the pointing hand—not on top of it.

In the Model 32 you have the straight-line recoil that is easier on the shoulder. By shooting the lower barrel first you eliminate muzzle-jump and can swing quickly and smoothly for the second shot. You have a wonderful new feature—the Remington Floating Barrel—that prevents the barrels from buckling when one gets hotter than the other. It always shoots straight, whereas barrels joined by a rib do not.

REMINGTON ARMS COMPANY, Inc.  
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There are good reasons why sportsmen who could afford it have been paying \$500 to \$1500 for European over-and-under guns,—narrow sighting plane, straight-line recoil, and other advantages. How Remington developed a moderately priced gun that preserves these advantages, adds new ones, and cures the defects of the European guns is one of the most important developments in the history of firearms. We have put the whole story in an attractive, illustrated circular. Write for your copy today. Please use the coupon.

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Gentlemen: Please send me complete information about Model 32.

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